AAMRL-TR-90-012

AD-A223 069

AIR FORCE PROCEDURE FOR PREDICTING AIRCRAFT NOISE AROUND AIRBASES: AIRBASE OPERATIONS PROGRAM (BASEOPS) DESCRIPTION

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JANUARY 1990

INTERIM REPORT FOR PERIOD JULY 1988 - JANUARY 1990

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FOR THE COMMANDER

JAMES W. BRINKLEY
Director
Biodynamics and Bioengineering Division
Harry G. Armstrong Aerospace Medical Research Laboratory

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a REPORT SECURITY CLASSIFICATION: UNCLASSIFIED	1b RESTRICTIVE MARKINGS: N/A
2a SECURITY CLASSIFICATION AUTHORITY	3 DISTRIBUTION/AVAILABILITY OF REPORT: Approved for public release; distribution is unlimited.
2b DECLASSIFICATION/DOWNGRADING SCHEDULE	
4 PERFORMING ORGANIZATION REPORT NUMBER(S): AAMRL-TR-90-012	5 MONITORING ORGANIZATION REPORT NUMBER(S)
6a NAME OF PERFORMING ORGANIZATION: Harry G. Armstrong, Aerospace Medical Research Laboratory; 6b OFFICE SYMBOL (If applicable): AAMRL/BBE	7a NAME OF MONITORING ORGANIZATION
6c ADDRESS (City, State, and ZIP Code): Wright-Patterson AFB OH 45433-6573	7b ADDRESS (City, State, and ZIP Code)
8a NAME OF FUNDING/SPONSORING ORGANIZATION; 8b OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c ADDRESS (City, State, and ZIP Code)	10 SOURCE OF FUNDING NUMBERS

PROGRAM ELEMENT NO	PROJECT NO	TASK NO	WORK UNIT ACCESSION NO
62202F	7231	34	08

11 TITLE (Include Security Classification)
(U) Air Force Procedure For Predicting Aircraft Noise Around Airbases: Airbase Operations Program (BASEOPS) Description.

12 PERSONAL AUTHOR(S)
Robert A. Lee and Henry T. Mohlman

13a TYPE OF REPORT	13b TIME COVERED	14 DATE OF REPORT (Year, Month, Day)	15 PAGE COUNT
Technical	FROM Jul 88 TO Jan 90	January 1990	81

16 SUPPLEMENTARY NOTATION

17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Acoustics, Sound, Aircraft Noise, Engine Noise, Community Noise Exposure, Environmental Impact.
20	01		

19 ABSTRACT (Continue on reverse if necessary and identify by block number)

This report is a users manual for the BASEOPS 3.00 program developed by AAMRL/BBE. This report describes the installation, use and limitations of this program. BASEOPS is the menu driven computerized airbase operations input program used in doing airbase noise assessments under the USAF Air Installation Compatible Use Zone (AICUZ) program. BASEOPS will create a file that can be directly interfaced to the NOISEMAP 6.0 program, used to calculate the total noise exposure from these input operations. BASEOPS contains default performance profiles (takeoff and landing) for Military Transient and Civil aircraft. The program also allows the user to create a NOISEMAP input file for any subset of the input data through a Global Editing Menu. This can be used for quickly creating multiple noise analyses for different operational input scenarios.

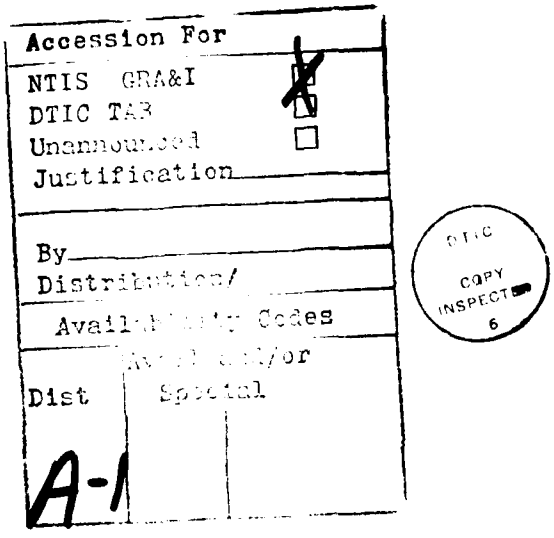
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT	21 ABSTRACT SECURITY CLASSIFICATION
☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	UNCLASSIFIED

22a NAME OF RESPONSIBLE INDIVIDUAL	22b TELEPHONE (Include Area Code)	22c OFFICE SYMBOL
ROBERT A. LEE	(513) 255-3664	AAMRL/BBE

DD Form 1473, JUN 86 *Previous editions are obsolete* SECURITY CLASSIFICATION OF THIS PAGE

PREFACE

The Authors wish to gratefully acknowledge Ms Felicia DeLorenzo and Mr. David Dennis of Spectrum Sciences and Software Inc. for their work in developing the original framework for the BASEOPS program and for some of the descriptions used in this report. The authors also wish to acknowledge Ms Jackie Brenaman and Ms Bea Heflin for the preparation of this report for publishing and to Mr. Jerry Speakman for his editorial comments.



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INTRODUCTION

BASEOPS is a computerized program for entering operations data needed to compute the total noise exposure around military airbases for the Air Force Air Installation Compatible Use Zone (AICUZ) program. The output of the BASEOPS program is a datafile containing a list of aircraft/airbase operations that is used by the USAF NOISEMAP program to compute the Day Night Level (DNL) for those operations.

BASEOPS is a menu driven program designed to have data entered in a top to bottom fashion from the main menu. Since runways must be defined before flight tracks can be assigned to them, entering of runways is placed before entering of flight tracks on the main menu. The program flow of BASEOPS 3.00 is displayed in Figure 1 (see pages 12, 13 for description of A, C, D, L, Cp and V abbreviations.) A series of default Altitude, Power & Airspeed profiles are provided with the BASEOPS program for Civil and Transient aircraft. For the Civil aircraft these default profiles are identical to those used in the Integrated Noise Model (INM version 3.9) in use by the Federal Aviation Administration (FAA). A listing of the default takeoff profiles used in BASEOPS is provided in Table 1. Since several takeoff profiles are available in the INM database 3.9 for each aircraft (identified by Trip Length), the underlined profile is the one selected for use in BASEOPS 3.00. A detailed description of these profiles can be found in AAMRL-TR-90-009, "BASEOPS Default Profiles for Civilian Aircraft", Lee, R.A., Jan 1990.

The aircraft available for use in the BASEOPS program (listed in Appendix A) are the aircraft in NOISEFILE. NOISEFILE is a reference noise database used by NOISEMAP in conjunction with the output of BASEOPS to create the noise contours for an airbase. AAMRL/BBE have acquired noise data for NOISEFILE in a series of controlled level flyover and ground runup noise tests. For aircraft that are not in this list the user can input the operations data by using the 'Other Aircraft' categories but they need to contact AAMRL/BBE (telephone (513) 255-3664 or AV 785-3664) to acquire the reference noise data before they can run the NOISEMAP program.

BASEOPS 3.00
PROGRAM FLOW

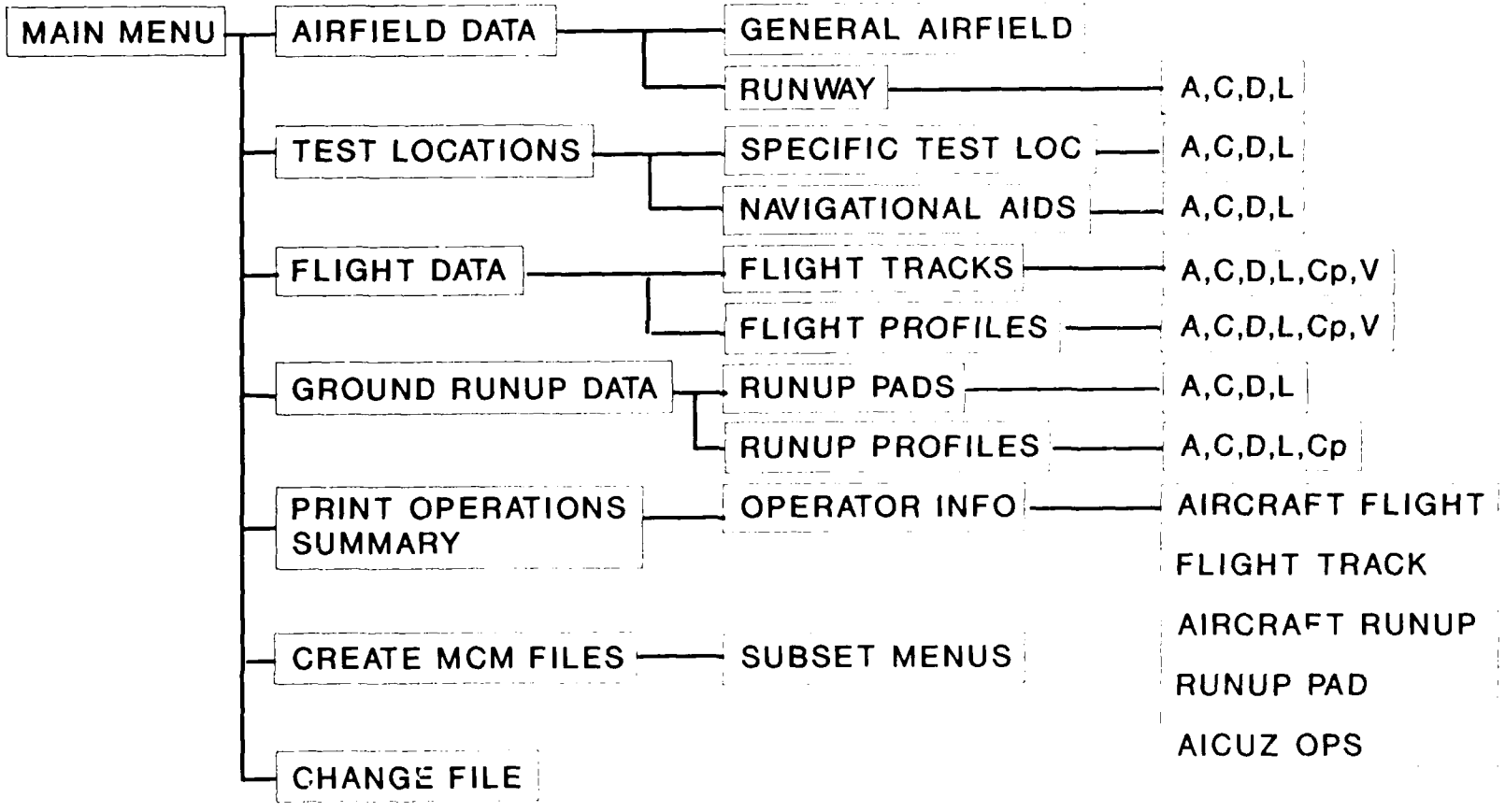

Figure 1. BASEOPS 3.00 Program Flow

TABLE 1

DEFAULT INM STAGE LENGTH PROFILES

A I R C R A F T D E F I N I T I O N D A T A

ID	NAME	DESCRIPTION	CAT	NO #	NOISE	APP	TAKEOFF PROFILES BY TRIP LENGTH (nm) 0-500	500-1000	1000-1500	1500-2500	2500-3500	3500-4500	over 4500
1	747100	B747-100/JT9DBD	JCOM	6	JT9DBD	1	1	2	3	4	5	6	0
2	747200	B747-200/JT9DFL	JCOM	7	JT9DFL	2	7	8	9	10	11	12	13
3	74710Q	B747-100QN/JT9DFL	JCOM	7	JT9DFL	1	1	2	3	4	5	6	0
4	747SP	B747SP/JT9DFL	JCOM	7	JT9DFL	3	14	15	16	17	18	19	20
5	74720B	B747-200B/JT9D-7Q	JCOM	50	JT9D7Q	73	238	239	240	241	242	243	244
6	DC820	DC-8-20/JT4A	JCOM	1	JT4A	4	21	22	23	24	25	26	0
7	707	B707-120/JT3C	JCOM	1	JT4A	5	27	28	29	30	31	32	0
8	720	B720/JT3C	JCOM	1	JT4A	6	33	34	35	36	37	0	0
9	707320	B707-320B/JT3D-7	JCOM	2	JT3D	7	38	39	40	41	42	43	44
10	707120	B707-120B/JT3D-3	JCOM	2	JT3D	8	45	46	47	48	49	50	0
11	720B	B720B/JT3D-3	JCOM	2	JT3D	9	51	52	53	54	55	0	0
12	DC850	DC-8-50/JT3D-3	JCOM	2	JT3D	10	56	57	58	59	60	61	0
13	DC860	DC-8-60/JT3D-7	JCOM	2	JT3D	11	62	63	64	65	66	67	68
14	DC870	DC-8-70/CFM56-2	JCOM	4	CFM562	12	69	70	71	72	73	74	75
15	BAE146	BAE 146/ALF 502R-5	JCOM	5	AL502R	57	200	201	202	0	0	0	0
16	707QN	B707-320B/JT3D-7QN	JCOM	3	JT3DQ	8	38	39	40	41	42	43	44
17	DC8QN	DC-8-60/JT3D-7QN	JCOM	3	JT3DQ	10	62	63	64	65	66	67	68
18	CONCRD	CONCORDE/OLY593	JCOM	8	OLY593	14	83	83	83	83	84	84	0
19	DC1010	DC-10-10/CF6-6D	JCOM	11	CF66D	15	85	86	87	88	89	90	0
20	DC1030	DC-10-30/CF6-50C2	JCOM	11	CF66D	58	203	204	205	206	207	208	209
21	DC1040	DC-10-40/JT9D-20	JCOM	11	CF66D	58	203	204	205	206	207	208	209
22	L1011	L-1011/RD211-22B	JCOM	12	RB2112	18	104	105	106	107	108	109	0
23	L10115	L-1011-500/RB211-524	JCOM	12	RB2112	19	110	111	112	113	114	115	116
24	727200	B727-200/JT8D-7	JCOM	9	3JT8D	20	117	118	119	120	0	0	0
25	727100	B727-100/JT8D-7	JCOM	9	3JT8D	21	121	122	123	124	0	0	0
26	727D15	B727-200/JT8D-15	JCOM	9	3JT8D	22	125	126	127	128	129	0	0
27	727Q9	B727-200/JT8D-9QN	JCOM	10	3JT8DQ	23	130	131	132	133	0	0	0
28	727Q7	B727-100/JT8D-7QN	JCOM	10	3JT8DQ	21	121	122	123	124	0	0	0
29	727Q15	B727-200/JT8D-15QN	JCOM	10	3JT8DQ	22	125	126	127	128	129	0	0
30	727D17	B727-200/JT8D-17	JCOM	10	3JT8DQ	24	134	135	136	137	0	0	0
31	A300	A300/CF6-50C	JCOM	19	2CF650	25	138	139	140	141	0	0	0
32	767CF6	B767-200/CF6-80A	JCOM	60	2CF680	76	247	248	249	250	251	252	253
33	767JT9	B767-200/JT9D-7	JCOM	60	2CF680	77	254	255	256	257	258	259	260
34	A310	A310/CF6-80A	JCOM	19	2CF650	27	146	147	148	149	0	0	0
35	737300	B737-300/CFM56-3-B1	JCOM	49	CFM563	72	235	236	237	261	0	0	0
36	737382	B737-300/CFM56-3B-2	JCOM	49	CFM563	78	262	263	264	265	0	0	0
37	BAC111	BAC111/SPEY512	JCOM	13	2JT8D	28	150	151	152	0	0	0	0
38	F28MK2	F28 MK2000/RB.183-2	JCOM	56	RB183	60	216	217	0	0	0	0	0
39	F28MK4	F28 MK4000/RB.183-2P	JCOM	57	RB183P	61	218	219	220	0	0	0	0
40	DC930	DC-9-30/JT8D-9	JCOM	13	2JT8D	30	155	156	157	0	0	0	0
41	DC910	DC-9 10/JT8D-7	JCOM	13	2JT8D	31	158	159	160	0	0	0	0
42	737	B737/JT8D-9	JCOM	13	2JT8D	32	161	162	163	164	0	0	0

TABLE 1 (Continued)

DEFAULT INM STAGE LENGTH PROFILES

A I R C R A F T D E F I N I T I O N D A T A

ID	NAME	DESCRIPTION	CAT	NO #	NOISE	APP	TAKEOFF PROFILES BY TRIP LENGTH (nm) 0-500	500-1000	1000-1500	1500-2500	2500-3500	3500-4500	over 4500
43	DC9Q9	DC-9-30/JT8D-9QN	JCOM	14	2JT8DQ	30	155	156	157	0	0	0	0
44	DC9Q7	DC-9-10/JT8D-7QN	JCOM	14	2JT8DQ	31	158	159	160	0	0	0	0
45	737QN	B737/JT8D-9QN	JCOM	14	2JT8DQ	32	161	162	163	164	0	0	0
46	DC950	DC-9-50/JT8D-17	JCOM	14	2JT8DQ	33	165	166	167	0	0	0	0
47	737D17	B737/JT8D-17	JCOM	14	2JT8DQ	34	168	169	170	171	0	0	0
48	MD81	MD-81/JT8D-209	JCOM	54	2JT8D2	62	221	222	223	0	0	0	0
49	MD82	MD-82/JT8D-217A	JCOM	54	2JT8D2	75	224	225	226	227	0	0	0
50	MD83	MD-83/JT8D-219	JCOM	54	2JT8D2	59	228	229	230	231	0	0	0
51	757RR	B757/RR 535E	JCOM	52	RR535E	79	266	267	268	269	270	0	0
52	757PW	B757/PW2037	JCOM	53	PW2037	80	271	272	273	274	275	276	0
53	COMJET	COMPOSITE GA JET	JGA	21	CGAJ	37	180	180	180	180	0	0	0
54	LEAR35	GATES LEAR 35/TFE731	JGA	23	TF7312	38	181	181	181	181	181	0	0
55	LEAR25	GATES LEAR 25/CJ610	JGA	22	CJ610	39	182	182	182	182	0	0	0
56	SABR80	N.A. SABRELINER 80	JGA	24	CF700	40	183	183	183	183	0	0	0
57	CNA500	CESSNA CITATION I	JGA	25	JT15D1	41	184	184	184	184	184	0	0
58	CL600	CHALLENGER CL-600	JGA	27	AL502L	56	199	199	199	199	199	0	0
59	GIIB	GULFSTREAM GIIB/SPEY	JGA	29	SP5118	63	211	0	0	0	0	0	0
60	MU3001	MITSUBISHI DIAMOND I	JGA	26	JT15D5	64	212	0	0	0	0	0	0
61	CL601	CHALLENGER CL-601	JGA	28	CF34	65	213	0	0	0	0	0	0
62	IA1125	IAI 1125 ASTRA	JGA	30	TF7313	66	214	0	0	0	0	0	0
63	L188	LOCKHEED 188 ELECTRA	PCOM	31	T56A7	42	185	185	185	185	185	0	0
64	DHC8	DHC-8/PW120	PCOM	59	PW120	74	210	0	0	0	0	0	0
65	DHC7	DHC-7/PT6A-50	PCOM	58	PT6A50	67	215	0	0	0	0	0	0
66	CVR580	CONVAIR 580	PCOM	34	501D13	45	188	188	188	188	0	0	0
67	HS748A	BAE HS 748A/DART	PCOM	35	RDA532	46	232	0	0	0	0	0	0
68	SD330	SHORTS SD3-30	PCOM	36	PT6A45	47	190	190	190	0	0	0	0
69	DHC6	DHC-6/PT6A-27	PCOM	38	PT6A27	48	191	191	0	0	0	0	0
70	DC6	DC-6/R2800	PCOM	40	4R2800	49	192	192	192	192	192	192	192
71	DC3	DC-3/R2800	PCOM	41	2R2800	50	193	193	193	193	0	0	0
72	SF340	SAAB 340/CT7-5	PCOM	37	CT75	68	245	0	0	0	0	0	0
73	CNA441	CESSNA CONQUEST II	PCOM	39	TPE331	69	246	0	0	0	0	0	0
74	GASEPV	GA SGL ENG VAR PITCH	PGA	44	SEPVP	70	233	0	0	0	0	0	0
75	GASEPF	GA SGL ENG FIX PITCH	PGA	45	SEPFP	71	234	0	0	0	0	0	0
76	BEC58P	BEECH BARON 58P	PGA	42	TSIO52	51	194	194	194	0	0	0	0
77	COMSEP	COMP. GA SINGLE ENG	PGA	43	CGASEP	52	195	195	0	0	0	0	0
78	KC135	KC-135A/J57	JMIL	46	J57	53	196	196	196	196	196	196	196
79	F4C	F-4C,D,E,F/J79	JMIL	47	J79	54	197	197	197	197	0	0	0
80	A7D	A7D/TF41	JMIL	48	TF41	55	198	198	198	198	0	0	0
81	C130	HERCULES/T56	PMIL	32	T56A15	43	186	186	186	186	186	186	186

PROGRAM INSTALLATION

The BASEOPS program is designed to operate on any IBM-PC compatible microcomputer operating under MS-DOS 2.1 or greater and will specifically run on the USAF Standard microcomputer (Desktop II, Zenith Z-248). The program requires about 600K Bytes of Hard disk space and one low density (360 K) floppy drive. The program comes distributed on a low denisty floppy diskette but high density (1.2 Mb) floppy drives can read the distributed low density distribution diskettes and will operate correctly with the BASEOPS program.

To install the BASEOPS program put the distribution diskette into the floppy drive, log on to that drive by typing the drive letter, a colon and the [Enter] key, then type INSTALLC at the system prompt. This will install the BASEOPS program and all working data files on the C: hard drive in a subdirectory labeled BASEOPS. This default setup will allow the user to execute the program from the C: hard drive and write the output files to the A: floppy drive. This can be changed to any existing drive configuration by modifying lines 2 and 3 of the file BASEOPSG.DAT. This is a normal ASCII file and can be modified with any word processor that can store the data back to a ASCII file format. To modify the file for use with the program residing on the D: drive and the files written out to floppy drive B: the BASEOPSG.DAT file would be changed to look as follows:

```
BASEOPS Data file version 3.00
B:
D:
```

The distribution copy of the BASEOPS program has a test case called HOLLOMAN. This test case is located in the BASEOPS subdirectory of the C: hard drive. To examine this test case simply copy the HOLLOMAN files to your default datafile drive (type COPY HOLLOMAN.* A: [Enter]), enter the BASEOPS program (type BASEOPS [Enter]) and type HOLLOMAN at the opening screen where it asks the user to 'Enter a FILENAME :_____:'. The user can then enter any of the menus to view or change this file to familiarize themselves with the operation of BASEOPS.

PROGRAM STRUCTURE AND FORMAT

The BASEOPS program will be installed on the user's hard drive with the following structure:

```
C:\BASEOPS\-SOURCES\
        |         |-------- = Directory for final storage of
        |                     NOISEMAP files (.BPS extension).
        |-----PROFILE\
        |         |-CIVPROFS = Default Performance Profiles for
        |         |            Civil Aircraft.
        |         |-MILTRANS = Default Performance Profiles for
        |                      Military Aircraft.
        |-BASEOPS .EXE = Main module of the BASEOPS program.
        |-BASEOPS1.EXE = Second module of the BASEOPS program.
        |-BASEOPS2.EXE = Third module of the BASEOPS program.
        |-BASEOPS3.EXE = Fourth module of the BASEOPS program.
        |-BASEOPS4.EXE = Fifth module of the BASEOPS program.
        |-BRUN45  .EXE = QuickBASIC Runtime module for BASEOPS
        |                program.
        |-BASEOPSA.DAT = Aircraft Power settings for measured
        |                flight data for Military aircraft.
        |-BASEOPSB.DAT = Aircraft Power settings for measured
        |                ground runup data for Military
        |                aircraft
        |-BASEOPSC.DAT = Aircraft Power settings for flight
        |                data for Civil aircraft.
        |-BASEOPSD.DAT = Aircraft Name and Code Number for
        |                Military aircraft flyover datafile.
        |-BASEOPSE.DAT = Aircraft Name and Code Number for
        |                Military aircraft ground runup
        |                datafile.
        |-BASEOPSF.DAT = Aircraft Name and Code Number for
        |                Civil aircraft flyover datafile
        |-BASEOPSG.DAT = Program and datafile drive
        |                designators.
        |-CONFIG  .FIL = Configuration file for the BASEOPS
        |                program to define the location for
        |                final (.BPS extension) NOISEMAP file.
        |-BOPACK  .EXE = Program to Pack BASEOPS datafiles
                         that have been edited.  This is
                         required only after extensive editing
                         of a BASEOPS file has made it too
                         large for floppy disk storage.
```

These are all the files that are required to run the BASEOPS program.

The following files are created by the BASEOPS program: NOTE! although these files are ASCII files, some of these files are cross indexed and editing of these files with a word processor is strongly discouraged.

FILENAME.AIR = Airfield file
FILENAME.RUN = Runway file
FILENAME.NAV = Navigational Aids file
FILENAME.SPC = Specific Points file
FILENAME.FAC = Flight Aircraft listing
FILENAME.FLT = Flight Track file
FILENAME.POW = Power profiles for Flight Aircraft
FILENAME.PAD = Runup pad location
FILENAME.RAC = Runup power profiles
FILENAME.ID = User Identification file
FILENAME.LOG = BPS creation log file

These files contain all the user input information. These files can be copied by typing at the system prompt COPY FILENAME.* NEWFILE.*. This will allow the user to quickly update their AICUZ inputs by making a new copy of their bases previous years BASEOPS files and simply editing them. Most of the input data should remain constant from year to year like Runway, Nav Aid and Flight Track locations as well as most of the operations profiles. Copying and updating each years files is the recommended method for use in the AICUZ program.

The .RAC, .FLT, .FAC and .POW files are random access indexed files. As parts of these files are 'deleted' they are not removed from the files but simply marked as deleted. After much editing and deleting of power profiles and/or flight tracks these files can become very large and need to be 'Packed'. This is done by running the BOPACK program. When using this program, it will prompt the user for a filename and then remove the deleted sections from these files and re-index them. NOTE! do not attempt to edit these files with a word processor, They are cross indexed and each line is spaced out to a set length (this does not show up on most word processors). BOPACK will maintain the file structure, delete the entries marked "DELETED" and reindix the files for use with the BASEOPS program.

PROGRAM LIMITATIONS

The BASEOPS program was written using the MICROSOFT QuickBASIC language and compiled to run on any IBM-PC compatible machine. The program requires about 600K of hard disk or high density floppy space plus about 65K (665K total) for writing a normal .BPS output file. The Program requires 275K of available memory to operate. The Screen displays require a CGA or better resolution. The USAF Standard Desktop II microcomputer (Zenith Z-248) exceeds all of these requirements.

Internal to the program the following limits were set by AAMRL/BBE. Most of these could be increased or decreased by changing the array dimensions and recompiling the program. If this need arises contact AAMRL/BBE at Wright Patterson AFB, OH 45433-6573, AV 785-3664.

MAX COMMENTS = 15 Lines on all comment input screens
MAX NAVAIDS = 15
MAX RUNWAYS = 10
MAX RUNUP PADS = 25
MAX SPECIFIC POINTS = 20 (Limited by NOISEMAP)
MAX RUNUP PROFILES = 200
MAX RUNUP POWERS = 10/PROFILE
MAX FLIGHT TRACKS = 200
MAX FLIGHT TRACK LEGS = 25/TRACK
MAX FLIGHT PROFILES = 300
MAX FLIGHT POWERS = 10/PROFILE (Limited by NOISEMAP)

Limits internal to BASEOPS (can not be accessed by user)

MAX AIRCRAFT NAMES = 200
MAX RUNUP AIRCRAFT NAME LENGTH = 25 Characters
MAX FLIGHT AIRCRAFT NAME LENGTH = 20 Characters
MAX AIRCRAFT IN SCALING MENUS = 90 (per flight & runup)
MAX FLIGHT TRACKS IN SCALING MENUS = 100/track type

RUNNING BASEOPS

To run the BASEOPS program, insert a blank, formatted diskette in the drive which will contain the data (default set for drive A:). Next, change to the drive and directory that contain the BASEOPS program (default set for C:\BASEOPS\) and type BASEOPS [enter] at the system prompt. This will bring up the opening display (Figure 2).

At the opening display the program will prompt the user to input a filename. If a new filename is entered the program will display a message that this is a new file and display the Main Menu (Figure 3). If an existing filename is entered the program will load that file and then display the Main Menu. This Main Menu is displayed on color monitors in a different color from the rest of the menus within BASEOPS for ease of identification. A suggested method for creating filenames is to use the base two letter designation and the year of the AICUZ inputs for the first four characters of the filename and the operators initials and a sequence number for the last four characters. Therefore a filename for the first 1989 HOLLOMAN AFB AICUZ prepared by John Smith would be **HL89JS01**. When the final Master Control Module (MCM) files are prepared for the NOISEMAP program the last four characters will be assigned a random number based on the case name. Therefore when several MCM files are prepared with different options these first four characters will always identfy base and year of each file. A log of these MCM files and filenames is contained in the .LOG file. For example a base may have a number of options run for the 1989 Holloman AFB AICUZ but all the MCM files (those with the .BPS extension) would look like **HL89XXXX.BPS**. This will make it easier for the Air Force Engineering Center (AFESC) to identify all the NOISEMAPs that need to be run.

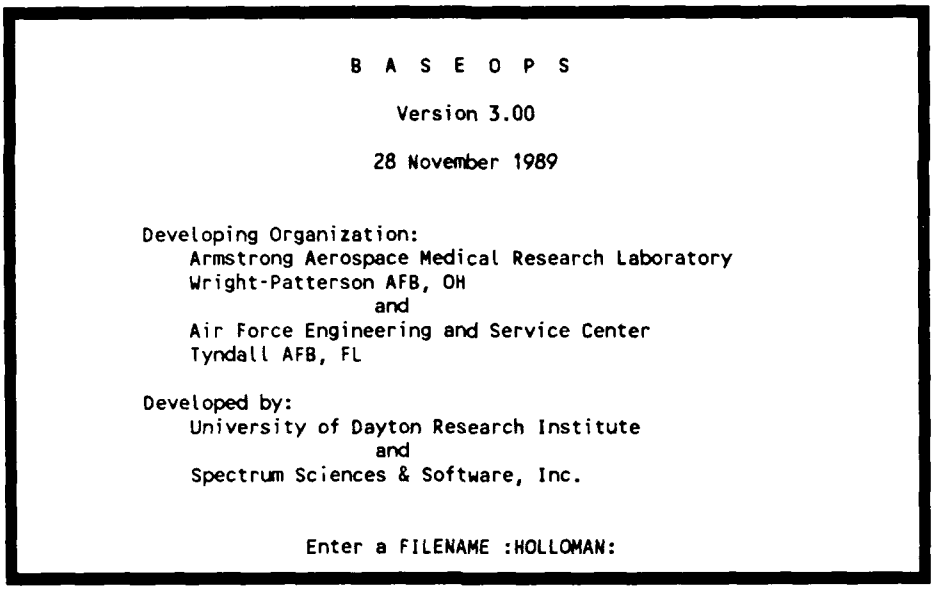

Figure 2. BASEOPS 3.00 Opening Display

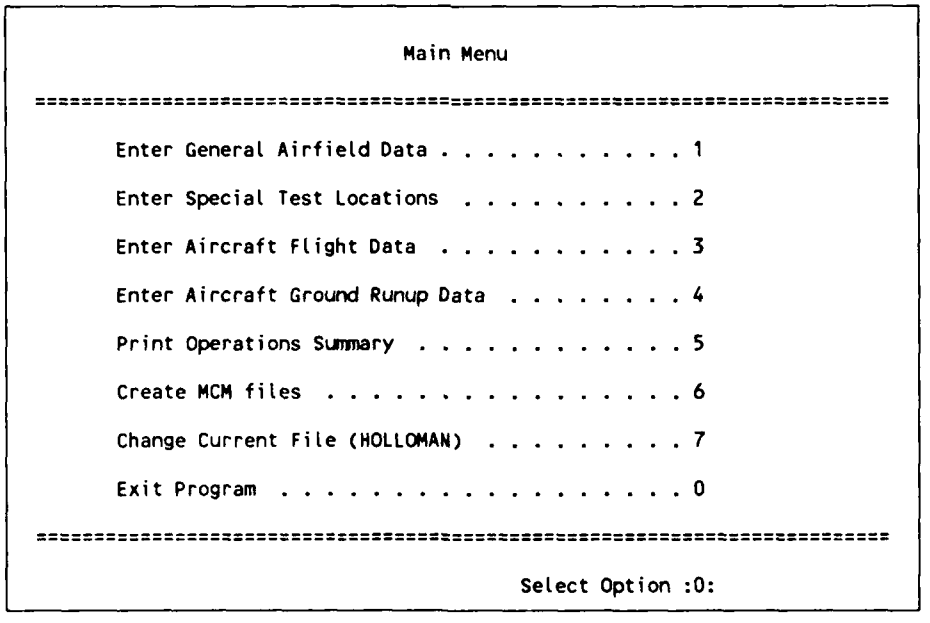

Figure 3. BASEOPS 3.00 Main Menu

GENERAL RULES ON DATA INPUT

Data required by the BASEOPS program is generally entered as a screen of information. A screen is displayed showing all of the required entries and the cursor is placed at the first entry. As each successive item is entered, the cursor moves to the next entry until all items have been entered. At this time, the following prompt will be displayed: Are these entries correct? (Y/N) : :. This prompt allows the user to correct mistakes made while entering the data. Be sure to carefully check all entries. If a mistake has been made, enter 'N' and the cursor will return to the first data entry. To correct a mistake, enter the correct data and press [enter]. If the entry is correct, press [enter] without making any entry changes. When all data on the screen is correct, enter 'Y' and the program will save the data and proceed to the next screen.

All data inputs are handled through an INPUT/EDIT function. This means that an entire line of data does not need to be typed to change just a few characters. All data fields are bracketed by a set of colons. The length of the spaces between the colons displays the length of the field (i.e. a data field of four characters will be displayed as :____:). The following keys can be used when editing an existing field:

Keystroke	Resulting Action
Right Arrow	moves cursor 1 position right
Left Arrow	moves cursor 1 position left
Up Arrow	moves cursor 1 field up and enters data
Down Arrow	moves cursor 1 field down and enters data
[Insert]	allows inserting of characters at cursor
[Delete]	deletes character above cursor
[Backspace]	deletes character to left of cursor
[End]	moves cursor to end of line
[Ctrl][End]	deletes characters to end of line

The following conditions signify an error. The program will cause a BEEP and allow the user to re-enter the data into the field.

1. Attempting to type beyond the end of the input area.
2. Attempting to INSERT characters past the end of the input area.
3. Attempting to BACKSPACE from the start of the input area.
4. Entering a value which is out of range or inappropriate for that field.

BASEOPS supports four functions for input of the Runways, Specific Test Locations, Navigational Aids and Runup Pads. They are Add, Change, Delete and List. Additional functions of Copy and View as well as these four functions are available for input of the Flight Tracks and Flight Profiles. Input of the Runup Profiles uses all of these functions except View. These six functions work the same in all of the menus. All Runways, Specific Test Locations, Navigational Aids, Flight Tracks, Flight Profiles, Runup Pads and Runup Profiles are given a four letter identifier (ID) by the user. These functions work as follows:

ADD:

In the Add function the ID field comes up blank. When the user enters a new ID the program checks to see if it is unique. If it is the program goes to a blank input screen. If the ID is already being used the program will BEEP and inform the user that the ID is already in use. Pressing [enter] on a blank ID field will cause the program to back up to the previous menu.

CHANGE:

In the Change function the ID field comes up blank. The user enters the ID of the entry to be changed. When entered the program will call up the entry screen and place the user on the first entry screen. If an invalid ID is requested the program will BEEP and inform the user that the ID was not found. Pressing [enter] on a blank ID field will cause the program to back up to the previous menu.

DELETE:

In the Delete function the ID field comes up blank. The user enters the ID of the entry to be deleted. When entered the program will prompt the user for verification of the entry to be deleted. When the user respond with a 'Y' the entry will be deleted. If an invalid ID is requested the program will BEEP and inform the user that the ID was not found. Pressing [enter] on a blank ID field will cause the program to back up to the previous menu.

LIST:

In the List function the program will display a list of all the entries and their ID's for each type that have been entered. The list will stop with each screen of data and prompt the user to press any key to continue the list or return to the previous menu.

COPY:

In the Copy function the ID field comes up blank. The user enters the ID of the entry to be copied from. When entered the program will prompt the user for a new ID for the entry to be copied to. The program will make an identical copy of the first entry with the new ID. If an invalid ID is requested the program will BEEP and inform the user that the ID was not found. Pressing [enter] on a blank ID field will cause the program to back up to the previous menu.

VIEW:

The View function will display a visual representation of the input Flight Tracks or Flight Profiles. These will be discussed in the Flight Track and Flight Profile sections of this report. Pressing [Esc] will cause the program to exit from the view screens and return to the previous menu.

GENERAL AIRFIELD DATA

Airfield data consists of general information about the airfield, runway locations and weather data for noise analysis. This data is entered by selecting '1' at the main menu. In the General Airfield Data Screen (Figure 4) the first information that is required is the airfield name and comments about this data set. Up to fifteen lines of comments are allowed to describe these operations. It is recommended that this area be used to describe in detail the operational scenario unique to this datafile. These comments will appear on the cover page of all the printouts. The Magnetic Declination is the deviation of Magnetic North to True North at this base location. This can be obtained from most maps of the base or from the publication "High/Low Altitude Instrument Approach Procedures" known as the DoD Flight Information (FLIP) charts. These are available at Base Operations headquarters. The Field Elevation is also available from the FLIP charts. The Field elevation is taken by averaging the values at each end of the primary runway. The number of operations periods in the day (2 or 3) is used to select which metric the final NOISEMAPs will be calculated with. A 2 period day is for DNL calculations and a 3 period day is for CNEL calculations. CNEL calculations are required by California state law and AF bases in this state require the three period day. All other bases can use the two period day DNL metric.

The DNL values that are predicted by NOISEMAP represent the long term average of the noise produced by the operations at a particular airbase. Since weather is a very important factor in the propagation of noise, selection of the temperature and humidity conditions is critical to the accuracy of the final noise contours. The temperature and humidity values to be filled into the General Airfield screen are to be determined by the following Air Force procedure:

(1) Determine the average monthly* temperature and relative humidity for each month from either the Air Weather Surface Climatic Briefs or local Climatological Data Summaries for the weather station at the installation.

(2) Determine the air absorption coefficient for the 1000 Hz 1/3 octave band from Figure 5 and rank the absorption coefficients in ascending order from the smallest to largest absolute values.

(3) Select the sixth smallest value of absorption coefficient and use the temperature and relative humidity corresponding to this value for input into the BASEOPS General Airfield data screen.

(See Table 2 for an example of this procedure)

```
                        Airfield Data
Enter ESC to Exit Comments Menu, 'I' to Insert Line, 'D' to Delete Line
Enter the Airfield Name and Comments for this airfield
:This database has been converted from a (27 Oct 86) Noisemap:
:5.2 file for testing of Noisemap 6.0. It is nearly identical:
:to the earlier version, except weather data for transients. :
:A Lotus spreadsheet (LLCONV) was used to convert from local :
:to global co-ordinates (Latitute, Longitude).               :


Magnetic Declination :10.69    : (deg.)
Direction of Declination (EAST/WEST) :EAST:

Field Elevation      :4069     : (ft.)

Number of operations periods in the day :2: (2 or 3)

Average yearly Temperature :69 : (deg. F)

Average yearly Humidity    :28 : (%)
```

Figure 4. General Airfield Data screen

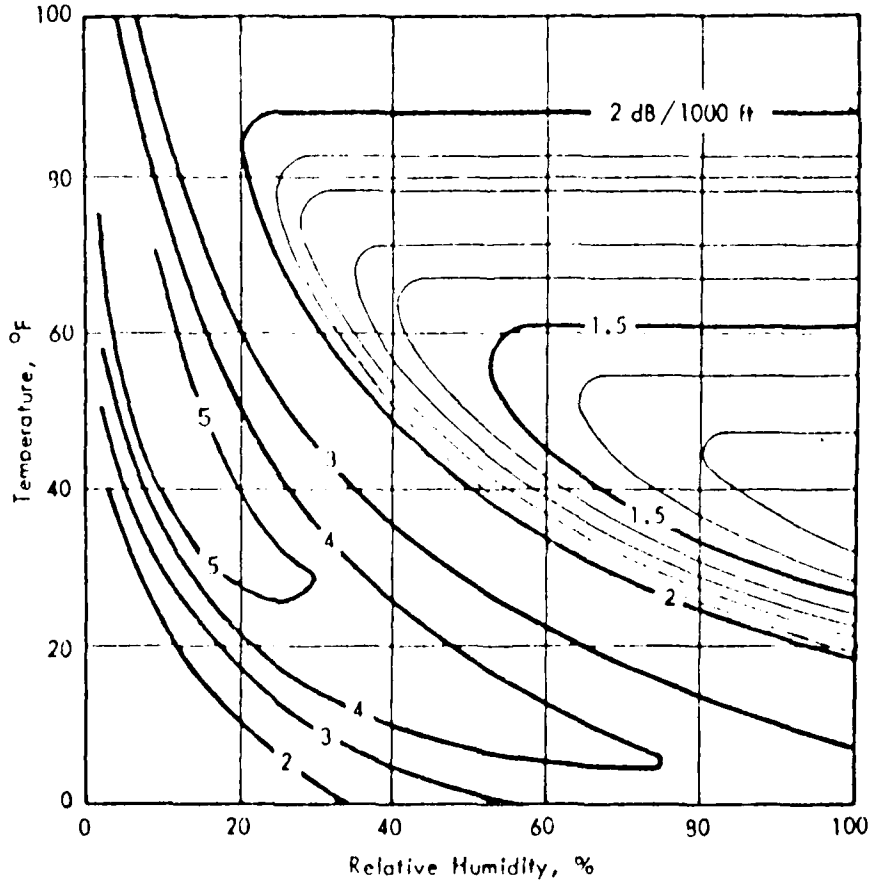

Figure 5. 1000 Hz Air Absorption values

* Where not given directly, monthly average values should be the arithmetic average of the "mean daily maximum" and "mean daily minimum" temperatures and the arithmetic average of the highest and lowest relative humidity values listed for the month.

TABLE 2

BASEOPS WEATHER DETERMINATION PROCEDURE

MONTH	AVG °F	AVG %H	ABSORPTION VALUES	ASCENDING RANK
Jan	36	57	2.00	
Feb	41	51	1.95	
Mar	46	42	2.05	
Apr	56	37	1.85	
May	65	32	1.80	5*
Jun	73	30	1.78	4
Jul	78	43	1.80	6*
Aug	76	49	1.77	3
Sep	70	44	1.68	2
Oct	59	47	1.56	1
Nov	46	46	1.90	
Dec	38	57	1.82	

* Use temperature and humidity values corresponding to either May or July to get NOISEMAP contours "representative" of variations due to changes in average monthly weather conditions. (Jun, Aug, Sep and Oct weather values would yield slightly larger NOISEMAP contour areas.)

When these data are entered the user can select option 2 from the General Airfield Data menu to enter Runway data. This will display the Runway Menu where the user can Add, Change, Delete or List the runways. The Runways are added in the Add Runway Screen (Figure 6). The first end of the first runway input will be used as a major reference point in other BASEOPS screens and as the center grid point for the NOISMAP noise exposure computations. It is recommended

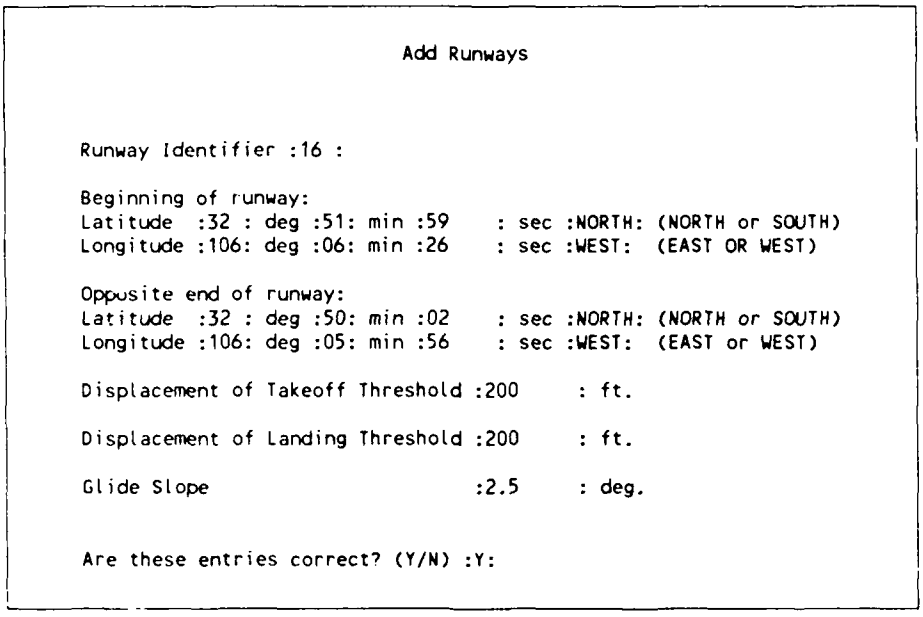

Figure 6. Add Runway screen

that the landing end of the major runway be used as this first input location (this will usually make the noise contours centered on the computation grid). The runway identifier should be the typical identifier that is used (i.e. 23C or 13L). Each direction on the runway must be input as a separate runway (i.e. a takeoff on runway 23 will go out the opposite of a takeoff on runway 05). The runway is identified by the Latitude and Longitude coordinates of each end of the runway. These values can also be found in the AF FLIP charts or from the base civil engineers. The use of Latitude/Longitude coordinates to identify the runway makes it possible for the final NOISEMAP contours to be interfaced with commercial demographic packages or geographic map databases. The Takeoff Threshold is the location on the runway that the aircraft starts its brake release. The Landing Threshold is the location on the runway where the aircraft is 50 feet AGL from touchdown. The displacements are the distance these locations are from the ends of the runway (typically the aircraft will not takeoff or land on the exact ends of the runway. The Glide Slope is the typical landing glide slope designated for this base. Once this data is input the user can back out to the main menu by repeated pressing of the [Enter] key.

SPECIAL TEST LOCATIONS

Special test locations are positions around the base identified by their Latitude and Longitude coordinates or distance, in feet, from the BASEOPS reference point (the first end of the first input runway). From the Special Test Locations menu the user can select (1) Specific Noise Test Locations or (2) Navigational Aids Locations. Special Noise Test Locations are used by NOISEMAP to compute the relative contribution from each flight or ground runup operation to the total noise exposure at that location. Table 3, flyover contributions, and Table 4, ground runup contributions, are sample printouts of this analysis. These can be used to help identify ways to alleviate noise complaints at various locations around the base. Navigational aids are used in checking the flight ground tracks that will be later input. These locations are displayed on the flight track graphics screen to aid in the verification of flight track layout. These Navigational Aids are not used in any computations but are for display only. Both of these types of locations can be input or changed from their input screens, which are identical except for the title (Figure 7 is the add specifics screen). The locations are entered by typing in a four letter identifier and the location in either the worldwide Latitude/Longitude coordinate system or a local X/Y coordinate system. The local X/Y coordinate system has its origin at the first input runway, displayed on the input screen, with positive X going down the runway and positive Y to the left of the runway. This gives a normal right-handed Cartesian coordinate system. The user can find the Latitude/Longitude of a location by inputing the local X/Y location. To make sure that parallel runways are input accurately, simply input the runway offset as a specific test location and use these Latitude and Longitude values to input the parallel runway. Accuracy of these computations within BASEOPS is within several feet. When all specific locations are input the user can back out to the main menu by repeated pressing of the [Enter] key.

TABLE 3

SPECIFIC POINT ANALYSIS PRINTOUT (FLYOVER)

DNL Fictitious AFB 1990 AICUZ summary - Full Case
SUMMARY OF AIRCRAFT FLIGHT OPERATIONS AT SPECIFIC GROUND LOCATION A

X = 78045.0 FT Y = 189346.0 FT

RANK	1	2	3	4	5	6
AIRCRAFT	61	31	33	33	61	38
MISSION	17	42	2	1	16	48
FLIGHT TRK	22D2	25DT	25D2	25D1	22D1	25DT
POWER	90.00 % RP	100.0 % RP	100.0 % RP	100.0 % RP	88.00 % RP	92.30 % RP
AIRSPEED	150 KTS	300 KTS	300 KTS	300 KTS	350 KTS	300 KTS
ALTITUDE	396 FT	2542 FT	456 FT	1059 FT	818 FT	3648 FT
SLANT DIST	7168 FT	2581 FT	6317 FT	4389 FT	6227 FT	3814 FT
ELEV ANGLE	3.17 DEG	79.97 DEG	4.14 DEG	13.97 DEG	7.55 DEG	73.01 DEG
EVENTS DAY	59.400	1.110	115.800	21.500	6.210	1.000
NIGHT	3.900	0.000	0.000	0.000	0.000	0.000
EFFECTIVE SEL	91.28 DB	104.78 DB	81.73 DB	87.47 DB	90.78 DB	98.20 DB
DNL	61.21 DB	55.24 DB	52.37 DB	50.79 DB	48.71 DB	48.20 DB
CUM DNL	61.21 DB	62.19 DB	62.62 DB	62.90 DB	63.06 DB	63.20 DB

RANK	7	8	9	10	11	12
AIRCRAFT	510	33	61	22	27	133
MISSION	66	3	52	34	38	60
FLIGHT TRK	25DT	25D3	25DT	25DT	25DT	25DT
POWER	97.00 % RP	100.0 % RP	90.00 % RP	4.920 EPR	1.900 EPR	96.00 % RP
AIRSPEED	250 KTS	300 KTS	250 KTS	250 KTS	250 KTS	250 KTS
ALTITUDE	1706 FT	1123 FT	3031 FT	1150 FT	2192 FT	3798 FT
SLANT DIST	1892 FT	4247 FT	3281 FT	1388 FT	2347 FT	3873 FT
ELEV ANGLE	64.40 DEG	15.34 DEG	67.52 DEG	55.93 DEG	69.03 DEG	78.72 DEG
EVENTS DAY	0.210	5.700	0.590	0.040	0.330	0.220
NIGHT	0.000	0.000	0.000	0.000	0.000	0.000
EFFECTIVE SEL	103.28 DB	87.82 DB	94.94 DB	105.53 DB	95.73 DB	96.63 DB
DNL	46.51 DB	45.38 DB	42.65 DB	41.55 DB	40.92 DB	40.05 DB
CUM DNL	63.29 DB	63.36 DB	63.40 DB	63.43 DB	63.45 DB	63.47 DB

RANK	13	14	15	16	17	18
AIRCRAFT	6	3	46	24	61	513
MISSION	30	28	50	36	20	68
FLIGHT TRK	25DT	25DT	25DT	25DT	16A2	25DT
POWER	970.0 C TI	1.800 EPR	101.0 % RP	100.0 % RP	85.00 % RP	93.00 % RP
AIRSPEED	160 KTS	250 KTS	350 KTS	90 KTS	170 KTS	250 KTS
ALTITUDE	1507 FT	2031 FT	2527 FT	3927 FT	2000 FT	2100 FT
SLANT DIST	1555 FT	2262 FT	2812 FT	4062 FT	24090 FT	2260 FT
ELEV ANGLE	75.77 DEG	63.88 DEG	63.96 DEG	75.14 DEG	4.76 DEG	68.28 DEG
EVENTS DAY	0.990	0.070	0.080	0.960	46.100	0.030
NIGHT	0.000	0.000	0.000	0.000	0.000	0.000
EFFECTIVE SEL	86.55 DB	97.74 DB	96.13 DB	83.48 DB	66.01 DB	97.47 DB
DNL	36.51 DB	36.19 DB	35.16 DB	33.31 DB	32.65 DB	32.25 DB
CUM DNL	63.48 DB	63.49 DB	63.49 DB	63.50 DB	63.50 DB	63.51 DB

FLIGHT DNL 63.53 DB
TOTAL DNL 63.53 DB

TABLE 4

SPECIFIC POINT ANALYSIS PRINTOUT (RUNUP)

DNL Fictitious AFB 1990 AICUZ summary - Full Case
SUMMARY OF AIRCRAFT RUNUP OPERATIONS AT SPECIFIC GROUND LOCATION A

X = 78045.0 FT Y = 189346.0 FT

RANK	1	2	3	4	5	6
AIRCRAFT	761	733	761	61	733	61
THRUST	91	100	91	80	100	80
RUNUP PAD	B638	A638	A638	ERB	TC	ERD
POWER	91.00 % RP	100.0 % RP	91.00 % RP	80.00 % NC	100.0 % RP	80.00 % NC
SLANT DIST	27480 FT	27403 FT	27403 FT	22231 FT	22048 FT	22221 FT
ANGLE	143.1 DEG	-127.5 DEG	-127.5 DEG	-95.4 DEG	149.6 DEG	-93.5 DEG
TIME DAY	7920.0 SEC	1476.0 SEC	6300.0 SEC	792.0 SEC	780.0 SEC	800.0 SEC
NIGHT	7524.0 SEC	126.0 SEC	90.0 SEC	16.0 SEC	0.0 SEC	20.0 SEC
AL	23.42 DB	27.23 DB	21.82 DB	29.54 DB	30.17 DB	28.89 DB
DNL	22.62 DB	11.61 DB	10.39 DB	9.40 DB	9.09 DB	8.96 DB
CUM DNL	22.62 DB	22.95 DB	23.18 DB	23.36 DB	23.52 DB	23.67 DB

RANK	7	8	9	10	11	12
AIRCRAFT	61	61	61	61	733	733
THRUST	80	80	80	80	100	100
RUNUP PAD	ERF	ERC	ERA	ERE	TC	807B
POWER	80.00 % NC	80.00 % NC	80.00 % NC	80.00 % NC	100.0 % RP	100.0 % RP
SLANT DIST	22174 FT	22174 FT	22237 FT	22153 FT	22048 FT	22026 FT
ANGLE	-91.8 DEG	85.8 DEG	84.0 DEG	87.5 DEG	149.6 DEG	-120.1 DEG
TIME DAY	720.0 SEC	800.0 SEC	792.0 SEC	720.0 SEC	390.0 SEC	390.0 SEC
NIGHT	12.8 SEC	20.0 SEC	16.0 SEC	12.8 SEC	0.0 SEC	0.0 SEC
AL	28.25 DB	27.11 DB	26.95 DB	27.22 DB	30.17 DB	29.64 DB
DNL	7.62 DB	7.18 DB	6.81 DB	6.59 DB	6.08 DB	5.55 DB
CUM DNL	23.78 DB	23.87 DB	23.95 DB	24.03 DB	24.10 DB	24.16 DB

RANK	13	14	15	16	17	18
AIRCRAFT	761	733	761	761	761	733
THRUST	91	92	91	91	91	65
RUNUP PAD	R11	R11	TC	807B	TC	R11
POWER	91.00 % RP	92.00 % RP	91.00 % RP	91.00 % RP	91.00 % RP	65.00 % RP
SLANT DIST	16198 FT	16198 FT	22048 FT	22026 FT	22048 FT	16198 FT
ANGLE	-98.9 DEG	-98.9 DEG	149.6 DEG	-120.1 DEG	149.6 DEG	-98.9 DEG
TIME DAY	501.6 SEC	2508.0 SEC	390.0 SEC	390.0 SEC	156.0 SEC	3762.0 SEC
NIGHT	0.0 SEC	0.0 SEC	0.0 SEC	0.0 SEC	0.0 SEC	0.0 SEC
AL	27.51 DB	20.30 DB	26.85 DB	24.03 DB	26.85 DB	12.70 DB
DNL	4.51 DB	4.29 DB	2.77 DB	-0.06 DB	-1.21 DB	-1.54 DB
CUM DNL	24.21 DB	24.25 DB	24.28 DB	24.30 DB	24.31 DB	24.32 DB

RUNUP DNL 24.40 DB
TOTAL DNL 63.53 DB

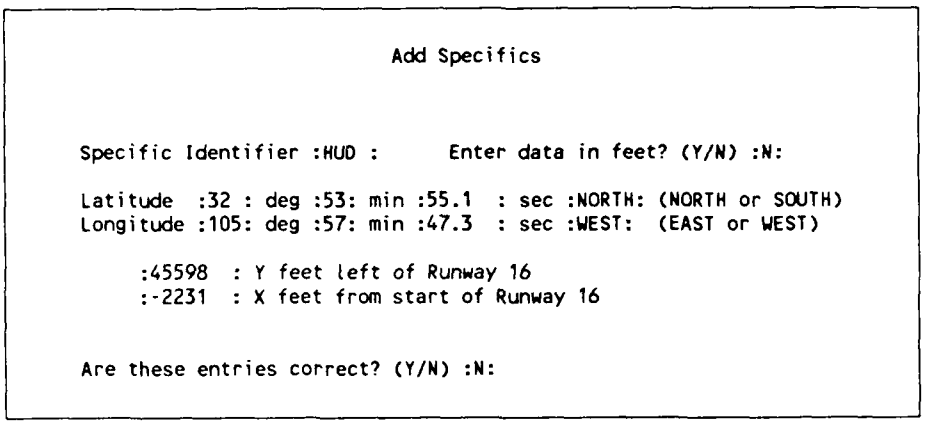

Figure 7. Add Specifics screen

AIRCRAFT FLIGHT DATA

After selecting option 3 from the Main Menu to enter the aircraft flight data, the program will display the Aircraft Operations Data Menu with a choice of entering flight tracks or flight profiles. Just like in all the BASEOPS menus the user should work from the top to the bottom. The user needs to input all the flight tracks first since the flight track must be identified before an operation can be assigned to it.

Flight tracks are entered via two screens (Figures 8 & 9). The first screen gives the track its ID, assigns it a specific type and to a specific runway then allows the user to enter comments to describe this track. The ID can be any four character combination. The suggested method for creating an ID is to use the runway and its type for the first three characters and a sequence letter (i.e. 34D1). There are three track types to describe flight ground tracks: Arrival, Departure and Closed pattern. The arrival track starts at the selected runway and is described by starting at the Landing Threshold (50 ft AGL from touchdown) and defining away from the runway. The departure starts at the selected runway takeoff threshold, goes down the runway and continues on out away from the base. The closed pattern starts at the selected runway, goes down and past the end of the runway, curves around and comes back to the starting point. When closed patterns are selected a closure factor will be computed for the user and displayed on the Flight Track Graphics Screen.

Once this screen of data is entered the actual ground track is described in screen 2. All tracks are described as a series of straight lines and constant radius turns. An input number is determined to be a straight segment distance or a radius of a curve by the number in the second column. If the second column number is zero the first column number is a segment distance. If the second column number is between -360 and +360 and not zero the first column number is a radius and the second column number is the angle of the turn (see Figure 9 for a closed pattern description). Note! the minus sign designates a left hand turn.

Once the flight track is described the BASEOPS program will allow the user to view the flight track by responding to the prompt to view with a 'Y'. The user will then be prompted for a background map file name. BASEOPS allows the user to overlay a background digitized map on the flight track graphics screen. If a map is available typing the file name will display the map along with the selected flight tracks. If a map is not available pressing [Enter] will bring the user directly to the Flight Track Graphics Screen (Figure 10). The flight tracks and background map selected will be plotted on the screen for verification.

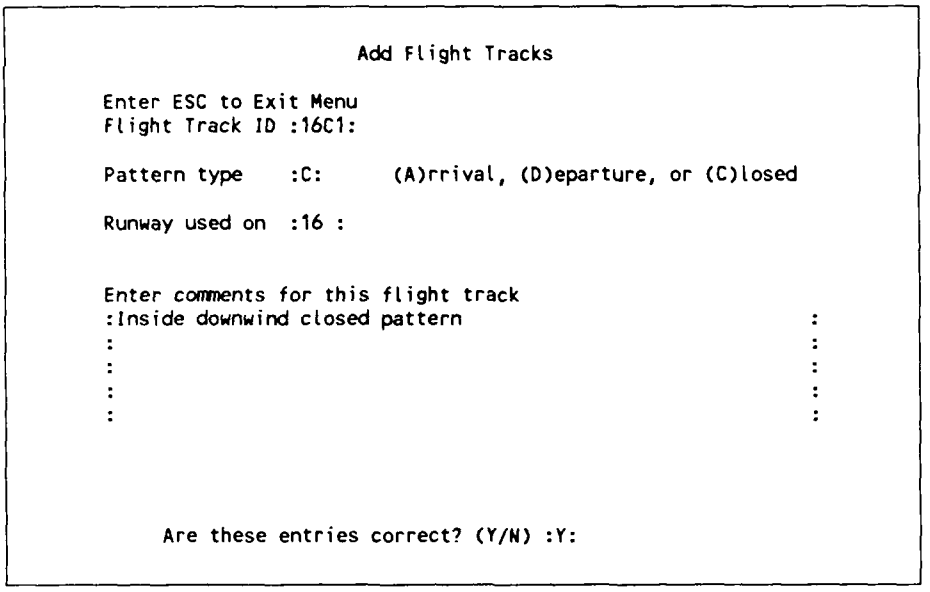

Figure 8. Add Flight Tracks screen 1

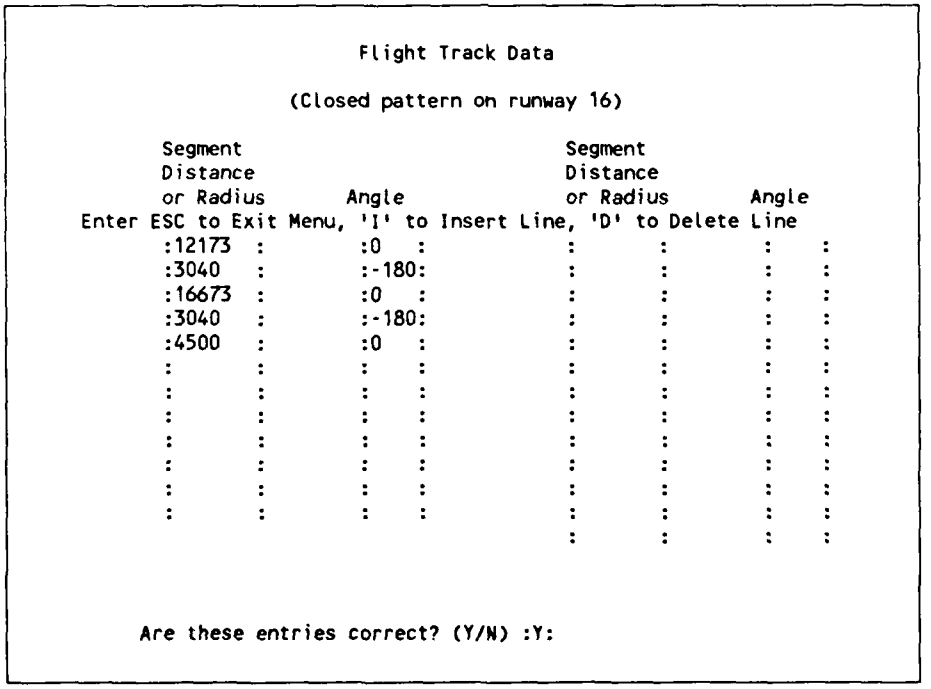

Figure 9. Add Flight Tracks screen 2

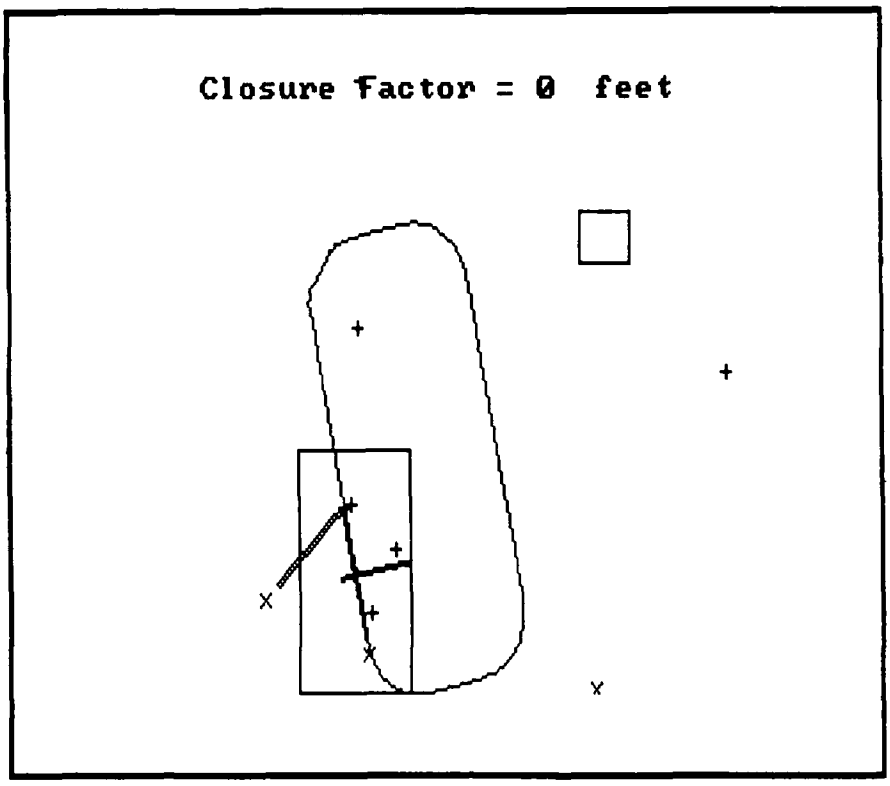

Figure 10. Flight Track graphics screen

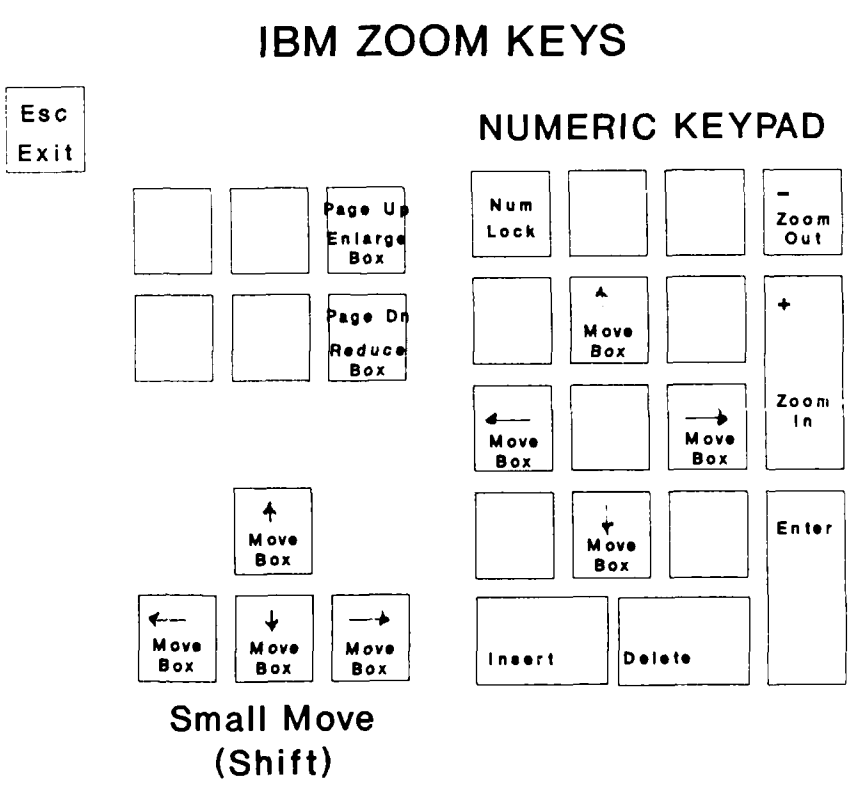

Figure 11. View Flight Track Zoom Keys for IBM keyboard

All runways will be drawn in with a line drawn across the runway at the takeoff or landing threshold to designate the start of the flight track. All navigational aids will be plotted as an "X" and any specific noise test locations will be plotted as a "+". If no background map was selected, a box simulating the base boundary will also be plotted. On the closed pattern tracks, the closure factor will also be displayed at the top of the screen. This factor is the closest distance in feet from the start to the end of the flight track. If the pattern closes, this factor should read zero feet. Once everything is plotted the Zoom Window (a small box) will appear in the center of the screen. This Zoom Window may be used to view portions of the screen in more detail. Figure 11 shows the location of the zoom keys and Table 5 lists the zoom key functions. When the user is done viewing the flight tracks he can touch [Esc] to exit the view screen and continue the program. The user can display a list of the input flight tracks by selecting option 4 at the flight track menu. Figure 12 shows a listing of tracks displayed with this option. A print out of this screen can be made by pressing the [Print Screen] key. Pressing any key will continue the list until the user is returned to the flight track menu. When all flight tracks are entered the user can back out to the Aircraft Flight Operations menu by pressing [Enter] successively.

TABLE 5

VIEW FLIGHT TRACK ZOOM KEY FUNCTIONS

Keystroke	Function
MOVE BOX	moves the Zoom Window in the direction of the corresponding arrow.
(Shift) MOVE BOX	same as MOVE BOX, but in smaller steps.
ZOOM IN	enlarges the area within the view box to fill the entire screen. Up to 4 ZOOM IN's may be executed in succession.
ZOOM OUT	restores the screen to the view before a ZOOM IN.
ENLARGE BOX	enlarges the size of the Zoom Window.
PEDUCE BOX	reduces the size of the Zoom Window.

The user can now enter the Flight Profiles menu by selecting option 2 at the Aircraft Operations menu. Here is where individual aircraft are assigned to a particular

List Flight Tracks

ID	Runway used on	Pattern type
16A1	16	Arrival
16A2	16	Arrival
25D1	25	Departure
16C1	16	Closed
16C2	16	Closed
16C3	16	Closed
25D2	25	Departure
25D3	25	Departure
34A1	34	Arrival
34A2	34	Arrival
34C1	34	Closed
16D1	16	Departure
16D2	16	Departure
22D1	22	Departure
22D2	22	Departure
34D1	34	Departure
34C3	34	Closed
34C2	34	Closed

Touch any key to continue list

Figure 12. Flight Track List screen

flight track and their operations are described. Flight profiles are also entered via two screens of data (Figures 13 & 14). Screen 1 starts with the usual four character ID. The aircraft type will determine which aircraft list is used to check data entries against as well as group the aircraft for the final printouts (an F-16 Transient will not be grouped with the F-16 Based aircraft in the printout summaries). Since the aircraft name must match the AF NOISEFILE aircraft names, the user can either type the name in directly or pick the aircraft name from a list. To access the list the user needs to type LIST in the aircraft name data field. From the displayed list the user can either type in the aircraft name exactly as it is displayed or type in the number next to the aircraft to be selected. The BASEOPS program will check the input aircraft name against this list and will BEEP if a match is not made. The flight track data field is also checked for a match with the previously input flight tracks and will BEEP if a match is not made. The Flight Track name must also match the user input track names. To display the available flight tracks list the user needs to type LIST in the flight track name data field. From the displayed list the user can type in the flight track ID exactly as it is displayed. The number of daily operations will display 2 data fields (Day/Night) or 3 data fields (Day/Evening/Night) depending on the parameter selected in the General Airfield data screen. The time periods are defined as follows:

2 period day
DAY = operations from 0700 to 2200 hours.
NIGHT = operations from 2200 to 0700 hours.

3 period day
DAY = operations from 0700 to 1900 hours.
EVENING = operations from 1900 to 2200 hours.
NIGHT = operations from 2200 to 0700 hours.

NOTE! When talking to operations people make sure that operations are defined for these time periods and <u>not</u> periods between sunrise and sunset.

Before entering the second Flight Profile Data Screen, if more than one power setting is available, the user must identify the measure of power that will be used for this selected aircraft. The choices available will be displayed on the screen. This second flight profile data screen will identify on the top line the aircraft, the track ID and type and the total track length in parenthesis. Each line of data represents a segment along the flight track. Data is to be entered into this screen by complete lines. Each line contains the following information:

Power Type = An operations power code (OPC) used in NOISEMAP to identify the measured noise

```
                    Add Flight Profiles

   Enter ESC to Exit Menu
   Flight Profile ID :LF16:

   Aircraft type     :T:      (B)ased, (T)ransient, or (C)ivilian

   Aircraft name     :F-16                                  :

   Flight track used :16A1:


   Enter comments for this flight profile
   :a/c 38 mission 225, 2.5 deg GS                          :
   :                                                        :
   :                                                        :
   :                                                        :
   :                                                        :

   Enter number of daily operations :
   Day :1     :                          Night :0     :

   Are these entries correct? (Y/N) :Y:
```

Figure 13. Add Flight Profiles screen 1

```
                        FLIGHT PROFILE DATA

                    F-16 on Arrival Track 16A1
                           (300000 ft.)
 Power       Cumulative        Altitude    Power Setting    Airspeed
 Type #       Distance                        % RPM
Enter ESC to Exit Menu, 'I' to Insert Line, 'D' to Delete Line
 :05:        :0      :        :50     :       :75   :        :140 :
 :05:        :5000   :        :218    :       :71.4 :        :140 :
 :05:        :33142  :        :1447   :       :75   :        :250 :
 :05:        :200000 :        :8732   :       :75   :        :250 :
 :  :        :       :        :       :       :     :        :    :
 :  :        :       :        :       :       :     :        :    :
 :  :        :       :        :       :       :     :        :    :
 :  :        :       :        :       :       :     :        :    :
 :  :        :       :        :       :       :     :        :    :
 :  :        :       :        :       :       :     :        :    :

Are these entries correct? (Y/N) :N:
Allowable power types :
 01    90 AFTERBURNER POWER        13    75 TRAFFIC PATTERN
 03    90 TAKEOFF POWER            14    92 INTERMED POWER (MIL)
 05    82 APPROACH POWER
 06    85 INTERMEDIATE POWER
```

Figure 14. Add Flight Profiles screen 2

data set to extrapolate to this power/airspeed conditions. The allowable power types are displayed at the bottom of this input screen for each aircraft.

Cumulative Distance = The distance in feet from the start of the flight track where this change occurs.

Altitude = (AGL) at this cumulative distance.

Power Setting = The aircraft power setting in the displayed units (i.e. % RPM, EPR, etc.) at this cumulative distance.

Airspeed = The airspeed (ground speed) of the aircraft in Knots at the cumulative distance.

Since the number of profile segments is limited to 10, the user shouldcarefully model major changes in power setting or altitude when they occur near the airbase. Changes that occur near the airbase and at less than 5000 feet AGL are the most important to model correctly since they significantly influence the predicted noise contours. The first input line for all profiles must be at 0 feet cumulative distance. On landing profiles (those assigned to an arrival track) the first input altitude must be 50 feet. This is to start the profile at and match the definition of the landing threshold. For takeoffs on departure and closed patterns if the first input airspeed is 0 the NOISEMAP program will implement the Takeoff Roll model to adjust for the effects to the noise from the aircraft accelerating down the runway. If this airspeed is not 0 the program will assume this is a Touch and Go pattern and not invoke the Takeoff Roll model. The user should only be concerned about modeling the operations as they occur at their installation. The second line of data should always contain the lift-off (or rotate) point of the aircraft. Some of the allowable power types do not allow for extrapolation of the power settings (i.e. Afterburner or water takeoffs). When these types are selected the program will automatically fill in the power setting and not allow the user to change it without first changing the power type. The last line of data must take the cumulative distance of all departures and arrivals past 200,000 ft. The cumulative distance in the last line of all closed patterns must match the flight track length displayed at the top of the screen in parenthesis.

Note! Although BASEOPS will allow more than ten segments to be entered for each profile NOISEMAP currently is limited to ten segments per profile.

The following editing features are available in this screen. These can only be executed at the beginning of each line (in the power type data field) except the arrow key movements which can be executed from any data field:

Key	Function
I	(I)nserts a blank line at the cursor.
D	(D)eletes the line of data at the cursor.
Arrows	Moves the cursor one character in the direction of the arrow nondestructively.
Esc	Exits the data entry field to the verification prompt.
C	(C)lears the data entry field erasing all lines of data below and including the line of data the (C)lear was entered on.
S	(S)aves an entered profile screen for Based aircraft. This is used to build a local file on based aircraft for ease of data entry. This data is saved in a PROFILE subdirectory to the BASEOPS working directory.
L	(L)oads a default profile for the entered aircraft and operation type. Default profiles are provided for all Civil and Transient Aircraft. Based aircraft will be loaded from a local file that was previously saved. This is to be considered a local working file for each installation.
[Enter]	Enters the input data and moves to the next data field. Entering a blank on the first data field signifies end of data entry and will move the user down to the verification prompt.

Default profiles that have been loaded can be edited. It is up to the user to verify that any default profiles that have been used represent the operations that are flown at their installation. The louder the aircraft the more careful the user should be in modeling the actual operations. Even a loud (i.e. KC-135A or C-5) transient operation could significantly contribute to the overall noise contours. After all the data have been entered the user can examine a graphical plot of the input data by responding with a (Y)es to the prompt to view. This plot (Figure 15) will display the input data and graph the altitude on the vertical axis and the track distances on the horizontal axis. Vertical lines will also be drawn at each of the input data segments. Since the complete track length

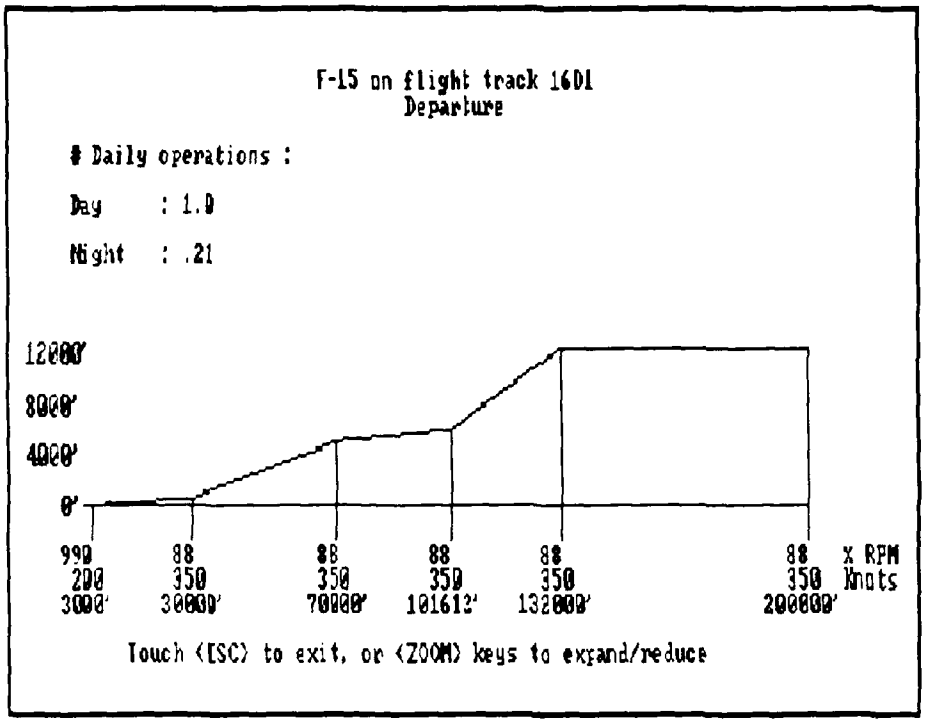

Figure 15. Flight Profile Graphics screen

List Flight Profiles

ID	Aircraft name	Type	Track ID	# Daily Operations		
332	T-38	Based	16A2	95	0	0
3317	T-38	Based	34A2	5.1	0	0
618	F-15	Based	16A1	19.8	0	3.9
619	F-15	Based	16A2	46.1	0	0
6118	F-15	Based	34A2	2.4	0	.2
3316	T-38	Based	34A1	2.1	0	0
3319	T-38	Based	34C2	5.7	0	0
3320	T-38	Based	34C3	2.9	0	0
6122	F-15	Based	34A1	1	0	.1
CITA	INM57 CESSNA BUS JET	Civilian	25DT	.04	0	0
LA4	A-4	Transient	16A1	.21	0	0
LA6	A-6	Transient	16A1	.05	0	0
LA7	A-7	Transient	16A1	.22	0	0
LA10	A-10A	Transient	16A1	.53	0	0
LA37	A-37	Transient	16A1	.09	0	0
LC5A	C-5A	Transient	16A1	.04	0	0
LC13	C-130	Transient	16A1	.3	0	0
LF11	F-111A	Transient	16A1	.21	0	0

Touch any key to continue list

Figure 16. Flight Profile List screen

is displayed on the horizontal axis the information on each segment often runs together. Pressing the "+" key will stretch out the display by cutting the horizontal distance in half and plotting it over the full screen. Pressing successive +'s will continue to stretch the screen display. Pressing the "-" key has the opposite effect of the "+" key. When done viewing the display the user can exit by pressing the [Esc] key. The user can display a list of summary information by selecting option 4 at the flight profile menu. Figure 16 shows the information contained in this summary. A print out of this screen can be made by pressing the [Print Screen] key. Pressing any key will continue the list until the user is returned to the flight profile menu. When all flight information is input the user can back out to the main menu by repeated pressing of the [Enter] key.

AIRCRAFT GROUND RUNUP DATA

After selecting option 4 from the Main Menu to enter the aircraft ground runup data, the program will display a Runup Data Menu with a choice of entering runup pads or runup profiles. Again, the user should work from the top of the menu to the bottom when entering data. The user needs to input all the runup pads first since the runup pad must be identified before an operation can be assigned to it.

Runup Pads are entered just like the Specific points or the Navigational aids except the user must identify the magnetic heading of the aircraft on the pad (Figure 17). Zero degrees would describe an aircraft on the pad with the nose of the aircraft pointing towards magnetic north. Magnetic north is used in this part of the program instead of true north since maintenance personnel use this in the identification of the pad at most AF bases. The user can display a list of the input runup pads by selecting option 4 at the Runup Pad Menu. Figure 18 shows the information contained in this summary. A print out of this screen can be made by pressing the [Print Screen] key. Pressing any key will continue the list until the user is returned to the Runup Pad Menu. When all pads have been input the user can back out to the Runup Data Menu by pressing the [Enter] key.

A runup profile is entered in two screens (Figures 19 & 20) similar to the flight profiles. The user enters the Runup Profiles Menu by selecting option 2 at the Runup Data Menu. Here is where individual aircraft are assigned to a particular runup pad and their operations are described. Screen 1 starts with the usual four character ID. Since the aircraft name must match the AF NOISEFILE aircraft names, the user can either type the name in directly or pick the aircraft name from a list. To access the list the user needs to type LIST in the aircraft name data field. From the displayed list the user can either type in the aircraft name exactly as it is displayed or type in the number next to the aircraft to be selected. The BASEOPS program will check the input aircraft name against this list and will BEEP if a match is not made. Note! Aircraft operating in the USAF Hushouses or Suppressors are identified as separate entries. The runup pad data field is also checked for a match with the previously input runup pads and will BEEP if a match is not made. A listing of available runup pads will be displayed at the bottom of the screen by typing LIST in the runup pad data field. A comment section is provided to describe this input operation or where it came from.

Before entering the second ground runup profile data screen, if more than one power setting is available, the user must identify the measure of power that will be used for this selected aircraft. The choices available will be displayed on the screen. This second ground runup profile

```
                        Add Runup Pads

Enter ESC to Exit Menu
Runup Pad Identifier :ERB :     Enter data in feet? (Y/N) :N:

Latitude  :32 : deg :50: min :25    : sec :NORTH: (NORTH or SOUTH)
Longitude :106: deg :06: min :23.0  : sec :WEST:  (EAST or WEST)

     :-1756  : Y feet left of Runway 16
     :9359   : X feet from start of Runway 16

Magnetic Heading :161     :


Are these entries correct? (Y/N) :Y:
```

Figure 17. Add Runup Pad screen

List Runup Pads

ID		Latitude		Longitude	Magnetic Heading	From start of Runway 16 Y (feet)	X (feet)
ERA	N	32-50-22.6	W	106-06-22.8	341	-1791	9601
ERB	N	32-50-25	W	106-06-23	161	-1756	9359
ERC	N	32-50-29.4	W	106-06-24	341	-1746	8906
ERD	N	32-50-32.2	W	106-06-23.7	161	-1661	8634
ERE	N	32-50-35.8	W	106-06-24.9	341	-1685	8256
ERF	N	32-50-38.5	W	106-06-25	161	-1635	7987
TC	N	32-50-5.7	W	106-06-25	51	-2333	11235
807B	N	32-50-7	W	106-06-25.2	141	-2322	11102
R11	N	32-50-34.5	W	106-07-35.2	153	-7558	7129
A638	N	32-50-41.1	W	106-05-23.5	126	3534	8828
B638	N	32-50-39.5	W	106-05-22.4	37	3592	9006
CRA	N	32-50-41.7	W	106-05-12	350	4503	8974
CRB	N	32-50-40.9	W	106-05-10.9	80	4578	9073
CRC	N	32-50-38.7	W	106-05-8.8	350	4706	9328
CRD	N	32-50-37.9	W	106-05-7.9	80	4763	9424
CRE	N	32-50-37.5	W	106-05-7.4	350	4797	9472

Touch any key to return to menu

Figure 18. Add Runup Pad List screen

```
                        Add Runup Profiles


      Enter ESC to Exit Menu
      Runup Profile ID :EA1 :

      Aircraft name    :F-15A                                  :

      Runup pad used   :ERA :


      Enter comments for this runup profile
      :thrust 63 and 80                                                :
      :                                                                :
      :                                                                :
      :                                                                :
      :                                                                :


           Are these entries correct? (Y/N) :Y:
```

Figure 19. Add Runup Profile screen 1

```
                              Runup Profile Data

                           (F-15A on Runup Pad ERA)
Power Setting (in % NC)   A/B          # Daily Runups          Duration
      (63-90)            power ?    Day              Night     (in sec.)

  Enter ESC to Exit Menu, 'I' to Insert Line, 'D' to Delete Line
  :63      :              :N:     :9.9   :           :.2    :   :900     :
  :80      :              :N:     :9.9   :           :.2    :   :80      :
  :        :              : :     :      :           :      :   :        :
  :        :              : :     :      :           :      :   :        :
  :        :              : :     :      :           :      :   :        :
  :        :              : :     :      :           :      :   :        :
  :        :              : :     :      :           :      :   :        :
  :        :              : :     :      :           :      :   :        :
  :        :              : :     :      :           :      :   :        :
  :        :              : :     :      :           :      :   :        :


Are these entries correct? (Y/N) :Y:

Special Case Power Settings:
 90    % NC   MAX PWR ZONE 5 A/B
```

Figure 20. Add Runup Profile screen 2

data screen will identify on the top line the aircraft and the runup pad ID in parenthesis. Each line of data input represents a power setting run upon this pad for this aircraft. Note! NOISEMAP assumes that all runup data are for SINGLE ENGINE operations. Data is to be entered into this screen by complete lines. Each line contains the following information:

Power Setting = The power setting of the aircraft in the power setting units specified. A range of allowable power settings are displayed at the top of the data column.

A/B power? = An indicator for special case power setting conditions (typically Afterburner Power). These special case conditions are listed at the bottom of the screen. When special case conditions are used the power setting must match exactly with the NOISEFILE reference power setting listed at the bottom of the screen with the special case description. When "Y" is selected in this field the special case power setting that is nearest to the power setting selected in the Power Setting data field is automatically filled into the Power Setting data field.

Day = The number of operations during an average busy day that this power setting is run at this pad for this aircraft for the daytime period (0700 to 2200 for a 2 period day or 0700 to 1900 for a 3 period day)

Evening = The number of operations during an average busy day that this power setting is run at this pad for this aircraft for the evening period (1900 to 2200 for a 3 period day). This data field is not displayed if a 2 period day was selected.

Night = The number of operations during an average busy day that this power setting is run at this pad for this aircraft for the nighttime period (2200 to 0700 for either a 2 or 3 period day)

Duration = The average duration, in seconds, that this power setting is operated at this pad for a single runup.

The following editing features are available in this screen. These can only be executed at the beginning of each

line (in the power setting data field) except the arrow key movements which can be executed from any data field:

Key	Function
I	(I)nserts a blank line at the cursor.
D	(D)eletes the line of data at the cursor.
Arrows	Moves the cursor one character in the direction of the arrow nondestructively.
Esc	Exits the data entry field to the verification prompt.
C	(C)lears the data entry field erasing all lines of data below and including the line of data the (C)lear was entered on.
[Enter]	Enters the input data and moves to the next data field. Entering a blank on the first data field signifies end of data entry and will move the user down to the verification prompt.

The user can display a summary list of the input profiles by selecting option 4 at the Runup Profile Menu. Figure 21 shows the information contained in this summary. A print out of this screen can be made by pressing the [Print Screen] key. Pressing any key will continue the list until the user is returned to the Runup Profile Menu. When all ground runup information has been input the user can back out to the Main Menu by repeated pressing of the [Enter] key.

List Runup Profiles

Runup profile ID	Aircraft name	Runup pad used
EA1	F-15A	ERA
EB1	F-15A	ERB
EC1	F-15A	ERC
ED1	F-15A	ERD
EE1	F-15A	ERE
EF1	F-15A	ERF
TC1	(AF32A-18) T-38 SUPP	TC
TC2	(AF32A-18) T-38 SUPP	TC
TC3	(AF32A-18) T-38 SUPP	TC
TC4	(AF32A-23) F-15 SUPP	TC
87B1	(AF32A-18) T-38 SUPP	807B
87B2	(AF32A-18) T-38 SUPP	807B
87B3	(AF32A-18) T-38 SUPP	807B
87B4	(AF32A-23) F-15 SUPP	807B
R2	(AF32A-18) T-38 SUPP	R11
R3	(AF32A-18) T-38 SUPP	R11
R4	(AF32A-23) F-15 SUPP	R11
A3	(AF32A-18) T-38 SUPP	A638

Touch any key to continue list

Figure 21. Runup Profile List screen

OPERATIONS SUMMARY PRINTOUTS

Five different operations summary printouts are available in the BASEOPS program. After selecting option 5 from the Main Menu, the program will display an Operator Information screen. The information provided here will be printed out on each of the five types of printouts. When this information is entered the program will display the printout summary menu (Figure 22). The different kinds of printouts available are:

Summary	Description
Aircraft Flight	A summary printout of all input flight operations grouped by aircraft.
Flight Track	A summary printout of all input flight operations grouped by flight track. This printout gives a detailed description of each flight track before listing the aircraft assigned to it.
Aircraft Runup	A summary printout of all input ground runup operations grouped by aircraft.
Runup Pad	A summary printout of all input ground runup operations grouped by runup pad. This printout gives a detailed description of each runup pad before listing the aircraft assigned to it.
AICUZ Operations	A summary printout of all inputs. This printout combines the other four printouts plus the input information on Airfield data, Special Test locations and detailed information on each input profile. This printout also provides a sign-off sheet for the Base Commander, Wing Commanders and others involved in verification of the AICUZ operational inputs.

When selected, these printouts will be sent directly to the attached printer through the normal printer port. These printouts can be directed to a file by typing FILE on the command line while loading the BASEOPS program. For example if the user were to type BASEOPS FILE at the system prompt when starting the BASEOPS program, after loading the file HL89TEST, any printouts from BASEOPS would be sent to a file named HL89TEST.P01. Any future printouts using this file would be sent to HL89TEST.P02, HL89TEST.P03 etc. A full sample AICUZ Operations printout is provided in Appendix B.

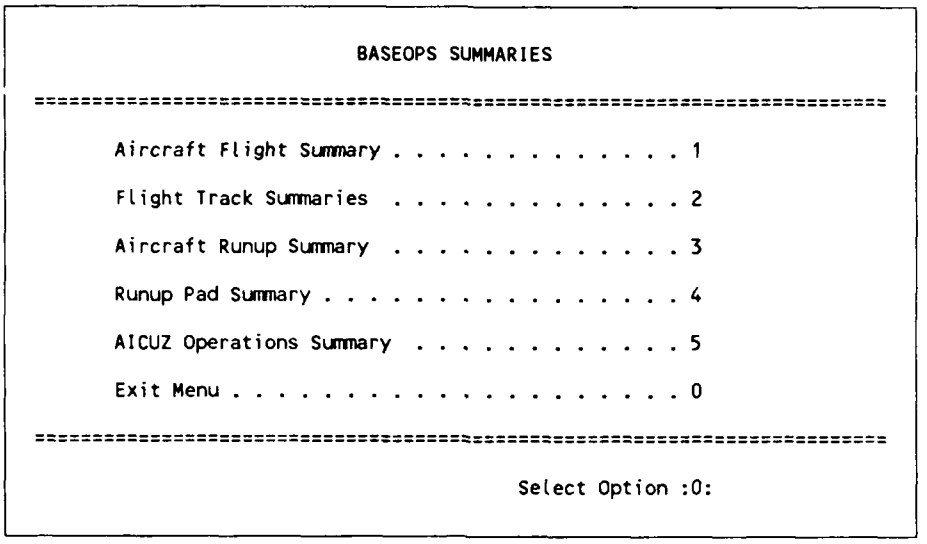

Figure 22. BASEOPS Printout Summary Menu

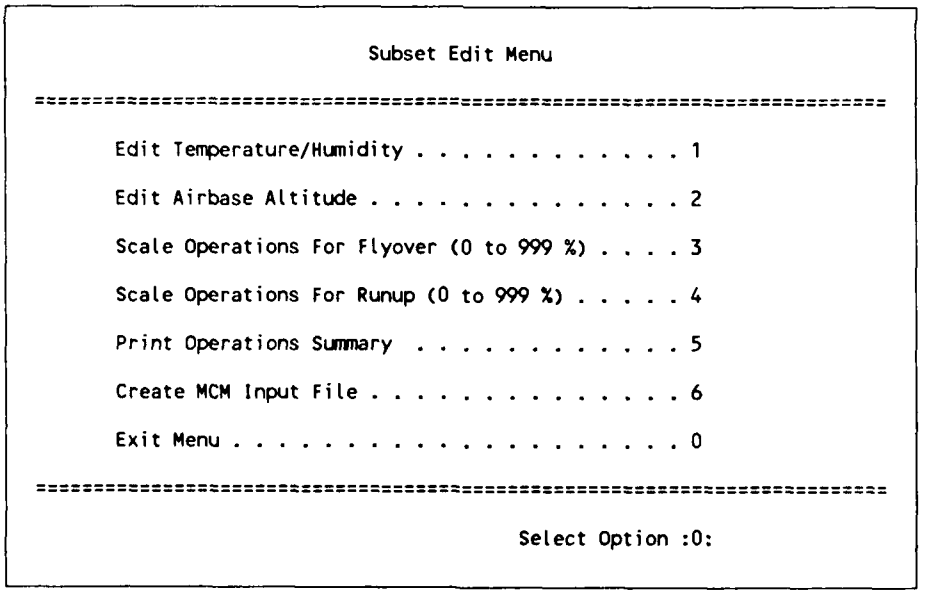

Figure 23. BASEOPS Subset Edit Menu

CREATING MCM FILES

Once all operations data are entered into BASEOPS the user can create several input files for the NOISEMAP program from this data set. Any subset of the input data set can be quickly created. These files interface to NOISEMAP via the NOISEMAP's Master Control Module (MCM). To create these files the user selects option 6 at the main menu. The user will then be prompted for the BASEOPS **full case name.** This is a sixty character sentence that is tagged to the MCM file to describe the full input BASEOPS data set. This case name will be used as the identifier of this file in the rest of the NOISEMAP program and will be tagged to all output files created from this input file. Once the full case name has been entered the BASEOPS program will prompt the user for a **subset case name.** If the same name as the full case name is selected,the program will create the MCM file (identified by a .BPS extension with the first four characters of the BASEOPS filename and placed in the SOURCES subdirectory) and write this full case name to the BASEOPS log file. If a new name is selected the program will first check if that case name has been used and then display the Subset Edit Menu (Figure 23). Here the user has the option of editing the complete data set with various options.

The first two options allow for creating various NOISEMAP's for the input operations under different weather conditions. When selected, the user is prompted to input the new conditions and then is returned to the Subset Edit Menu. These can be used to examine the effect of Winter vs Summer or other weather conditions on the propagation of the noise around the airbase.

The next two options in this Subset Edit menu allow for the scaling of input operations. The scaling of operations in the Flyover Menu will not affect any of the runup operations nor will scaling runup operations affect any of the flyovers (i.e. to zero out all F-15 operations the user must zero them out in both the Flyover and Runup Menus). When selecting the operations scaling, a scaling menu (Figures 24 & 25) will be displayed. When scaling operations from these menus the data set is always established at 100% (i.e. if the user scaled the flight operations by aircraft, zeroed out all F-15 operations, and then went in to scale all flight operations to 120% the F-15 operations would <u>not</u> be deleted). This is to prevent the confusing situation of creating subsets of subsets of the original operations. Scaling is done by a scaling factor. This is originally set to 100%, representing all operations as input through the BASEOPS program. To create a data set with a 20% increase in operations the user would type in 120. To create a file with a reduction of operations the

```
                    Flyover Scaling Menu

================================================================================

      Scale All Flight Operations . . . . . . . . . . . 1

      Scale By Aircraft . . . . . . . . . . . . . . . . 2

      Scale By Track  . . . . . . . . . . . . . . . . . 3

      Scale By Runway . . . . . . . . . . . . . . . . . 4

      Scale By Individual Profile . . . . . . . . . . . 5

      Exit Menu . . . . . . . . . . . . . . . . . . . . 0

================================================================================

                                        Select Option :0:
```

Figure 24. Flyover Scaling Menu

```
                     Runup Scaling Menu

================================================================================

      Scale All Runup Operations. . . . . . . . . . . . 1

      Scale By Aircraft . . . . . . . . . . . . . . . . 2

      Scale By Runup Pad  . . . . . . . . . . . . . . . 3

      Scale By Individual Profile . . . . . . . . . . . 4

      Exit Menu . . . . . . . . . . . . . . . . . . . . 0

================================================================================

                                        Select Option :0:
```

Figure 25. Runup Scaling Menu

user would type in the remaining percentage of the original operations (i.e. for a 20% reduction the user would input 80).

From the Flyover Scaling Menu the user has five different ways to scale the flight operations. When scaling by All Flight Operations the user must input only one scaling factor. This value will then be applied to all the flight operations when creating the MCM files. When scaling by aircraft all the aircraft in the input database for flight operations are displayed (Figure 26). The user then selects the scaling factor for each aircraft type and is also given an option to assign all of these aircraft operations to the daytime or nighttime periods. When scaling by track all the input flight tracks are grouped by Departure, Arrival and Closed Pattern categories (Figure 27). The user then selects the scaling factor for the operations assigned to each track and is given the option of assigning these operations to another track of similar type (i.e. the user can not assign departure operations to an arrival track). When scaling by runway all the input runways are displayed (Figure 28). The user then selects the scaling factor for all operations assigned to that runway and is given the option of assigning these operations to another runway. When scaling by individual profile all the input flight profiles are displayed (Figure 29). The user then selects the scaling factor for each profile and is given the option of assigning these operations to another track or to the daytime or nighttime period. Again the user can only assign cperations to tracks of similar types. If an incorrect or nonexistant track type or runway is input, the program will BEEP, give a list of available tracks or runways, then return the cursor to the beginning of the data field.

From the Runup Scaling Menu the user has four different ways to scale the runup operations. When scaling by All Runup Operations the user must input only one scaling factor. This will then be applied to all the runup operations when creating the MCM files. When scaling by aircraft all the aircraft in the input database for runup operations are displayed (Figure 30). The user then selects the scaling factor for each aircraft type and is also given an option to assign all of these aircraft operations to the daytime or nighttime periods. When scaling by runup pad all the input runup pads are displayed (Figure 31). The user then selects the scaling factor for all operations assigned to that runup pad and is given the option of assigning these operations to another runup pad. When scaling by individual profile all the input runup profiles are displayed (Figure 32) The user then selects the scaling factor for each profile and is given the option of assigning these operations to another runup pad or the daytime or nighttime

```
                    Scale Flyover Operations By Aircraft

================================================================================

                    X = all operations left as is
                    D = all operations added to day period
                    N = all operations added to night period
  Enter ESC to Exit Menu
scale    ----- aircraft ----- asgn to   scale    ----- aircraft ----- asgn to
:100:(%) A-10A                 :X:     :100:(%) A-3                   :X:
:100:(%) A-37                  :X:     :100:(%) A-4                   :X:
:100:(%) A-6                   :X:     :100:(%) A-7                   :X:
:100:(%) C-130                 :X:     :100:(%) C-141                 :X:
:100:(%) C-5A                  :X:     :100:(%) E-3A                  :X:
:100:(%) F-111A                :X:     :100:(%) F-14                  :X:
:100:(%) F-15                  :X:     :100:(%) F-16                  :X:
:100:(%) F-4                   :X:     :100:(%) F-5E                  :X:
:100:(%) INM57 CESSNA BUS JET  :X:     :100:(%) INM77 1-ENG PISTON    :X:
:100:(%) OV-10                 :X:     :100:(%) T-33                  :X:


Are these entries correct? (Y/N) :Y:
```

Figure 26. Scale Flyover Operation by Aircraft screen

```
                      Scale Flyover Operations By Track

================================================================================
  Enter ESC to Exit Menu
      DEPARTURES                  ARRIVALS                  CLOSED PATTERN
scale   track   asgn to    scale   track   asgn to    scale   track   asgn to
:100:%  16D1    :16D1:     :100:%  16A1    :16A1:     :100:%  16C1    :16C1:
:100:%  16D2    :16D2:     :100:%  16A2    :16A2:     :100:%  16C2    :16C2:
:100:%  22D1    :22D1:     :100:%  34A1    :34A1:     :100:%  16C3    :16C3:
:100:%  22D2    :22D2:     :100:%  34A2    :34A2:     :100:%  34C1    :34C1:
:100:%  25D1    :25D1:                                :100:%  34C2    :34C2:
:100:%  25D2    :25D2:                                :100:%  34C3    :34C3:
:100:%  25D3    :25D3:
:100:%  25DT    :25DT:
:100:%  34D1    :34D1:




  Are these entries correct? (Y/N) :Y:
```

Figure 27. Scale Flyover Operation by Track screen

```
                    Scale Flyover By Runway

 ======================================================================

   Enter ESC to Exit Menu
  scale     runway  asgn to                scale     runway  asgn to
 :100:(%)     16    : 16:                 :100:(%)     22    : 22:
 :100:(%)     25    : 25:                 :100:(%)     34    : 34:




    Are these entries correct? (Y/N) :Y:
```

Figure 28. Scale Flyover Operation by Runway screen

```
                  Scale Flyover By Individual Profile
 ============================================================================
                 X = all operations left as is
                 D = all operations added to day period
                 N = all operations added to night period
                                                          ---- asgn to ----
  scale     ----- aircraft -----     Profile  Track        Track  Operations
 :100:(%)  T-38                       3313     25D1        :25D1:    :X:
 :100:(%)  T-38                       3314     25D2        :25D2:    :X:
 :100:(%)  T-38                       3315     25D3        :25D3:    :X:
 :100:(%)  T-38                        331     16A1        :16A1:    :X:
 :100:(%)  T-38                        332     16A2        :16A2:    :X:
 :100:(%)  T-38                       3316     34A1        :34A1:    :X:
 :100:(%)  T-38                       3317     34A2        :34A2:    :X:
 :100:(%)  T-38                        333     16C1        :16C1:    :X:
 :100:(%)  T-38                        334     16C2        :16C2:    :X:
 :100:(%)  T-38                        335     16C3        :16C3:    :X:




   Are these entries correct? (Y/N) :Y:
```

Figure 29. Scale Flyover Operation by Individual Profile screen

```
                    Scale Runup Operations By Aircraft

==========-=============================================================================

                    X = all operations left as is
                    D = all operations added to day period
                    N = all operations added to night period

 scale    ----- aircraft ----- asgn to   scale    ----- aircraft ----- asgn to
:100:(%) (AF32A-18) T-38 SUPP    :X:    :100:(%) (AF32A-23) F-15 SUPP    :X:
:100:(%) F-15A                   :X:    :100:(%) T-38A                   :X:




  Are these entries correct? (Y/N) :Y:
```

Figure 30. Scale Runup Operation by Aircraft screen

```
                              Scale Runup By Pad

    ================================================================================

      Enter ESC to Exit Menu
     scale      pad     asgn to                scale      pad     asgn to
    :100:(%)   807B      :807B:               :100:(%)   A638      :A638:
    :100:(%)   B638      :B638:               :100:(%)    CRA      : CRA:
    :100:(%)    CRB      : CRB:              :100:(%)    CRC      : CRC:
    :100:(%)    CRD      : CRD:              :100:(%)    CRE      : CRE:
    :100:(%)    ERA      : ERA:              :100:(%)    ERB      : ERB:
    :100:(%)    ERC      : ERC:              :100:(%)    ERD      : ERD:
    :100:(%)    ERE      : ERE:              :100:(%)    ERF      : ERF:
    :100:(%)    R11      : R11:              :100:(%)     TC      :  TC:




       Are these entries correct? (Y/N) :Y:
```

Figure 31. Scale Runup Operation by Pad screen

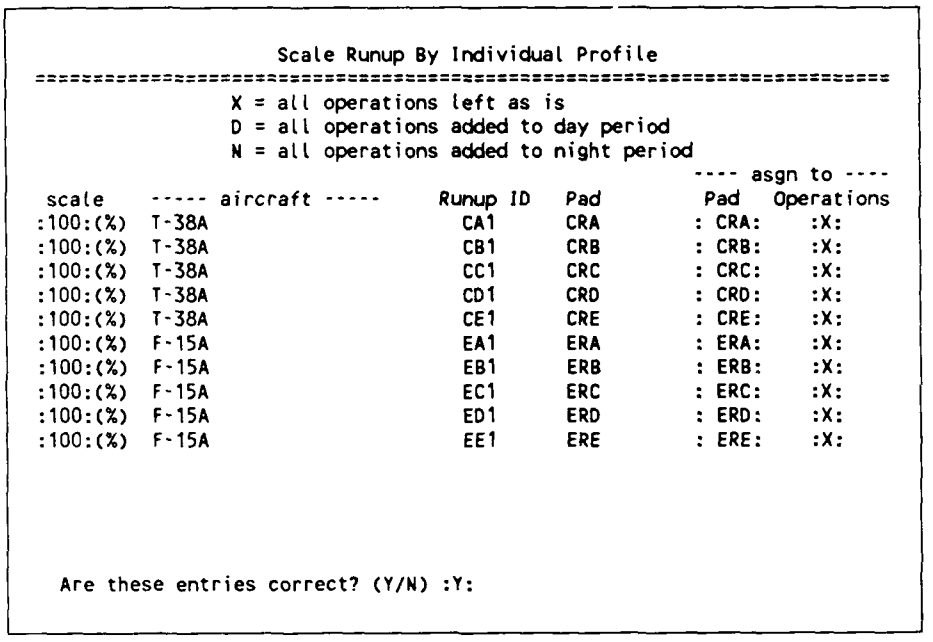

Figure 32. Scale Runup Operation by Individual Profile screen

period. If a nonexistant runup pad is input, the program will BEEP, give a list of available pads, then return the cursor to the beginning of the data field.

After the operations for this subset have been scaled, the user can print out an operations summary for this defined subset. The same options will be available for the user as from the Main Menu. The user can then create the MCM input files by selecting option 6 from the Subset Edit Menu. **Note!** Once the MCM files have been created the program will bring the user back to the BASEOPS Main Menu. The user will then **NOT** be able to create a printout of this subsets operations. After creating the MCM files the program will log the Subset Case Name and the date and time of creation into the log file for this BASEOPS data set. When a copy of the BASEOPS files are to be used to create a new data set and a new data log is to be started, the user should simply delete the FILENAME.LOG file. When this file is missing, the BASEOPS program will create it the first time a new MCM file is created.

CHANGING FILES AND EXITING

Selecting option 7 from the Main Menu allows the user to load a new BASEOPS file without exiting the program. When this is selected all of the internal arrays are cleared of the previous files and the new files are loaded into the proper arrays. The filename of the current loaded BASEOPS data set will be displayed at the option 7 line of the Main Menu in parenthesis.

Selecting option zero will terminate the program and bring the user back to the MS-DOS system prompt. No effort is required of the user to save the data since the data is saved automatically by the program as it is being entered. Each data screen is saved when the user answers Yes to the prompt "Are these entries correct? (Y/N) : :". Therefore if power is lost to the computer during data entry, only the last screen the user was working on will be lost.

FILE TRANSFER TO NOISEMAP 6.0

NOISEMAP's Master Control Module (MCM) is designed to interact directly with the outputs of the BASEOPS program. The MCM files created by BASEOPS (.BPS extension files) are read by the NOISEMAP MCM and used to create the OMEGA run decks for creating the noise data specific to the defined operations. These noise data and operation descriptions are then used to create the NOISEMAP input deck. The MCM will then run NOISEMAP to calculate the noise exposure at each specific test location selected for detailed analysis and at each location of a 100 by 100 grid (10,000 grid points) from which the final noise exposure contours are plotted using the NMPLOT program.

APPENDIX A

NOISEFILE 6.0
MILITARY FLYOVER DATA

A-3	C-130E	OH-6A
A-4	C-130A&D	UH-13
A-5	C-130H	CH-47C
A-6	C-131	HH-53
A-7	C-135A	CH-54B
A-10A	C-135B	TH-55A
A-37	KC-135R	OTHER HELICOPTER
B-1	C-137	OTHER MILITARY
B-52B&D	C-140	P-3
B-52G	C-141	TR-1
B-52H	E-3A	SR-71
B-57E	E-4	S-3A
FB-111	F-4	T-2C
C-5A	F-5A&B	T-29
C-7	F-5E	T-33
C-9	F-8	T-34
KC-10	F-14	T-37
C-12	F-15	T-38
YC-14	F-16	T-39
YC-15	F-18	T-41
C-17	F-100	T-42
C-18	F-101	T-43
C-20	F-102	T-44
C-21	F-104G	T-45
C-22	F-105	U-2
C-23	F-106	U-4B
KC-97	F-111A	U-6
C-118	F-111D	U-21
C-119	F-111F	AV-8A
C-121	UH-1N	AV-8B
C-123K	CH-3C	OV-10

NOISEFILE 6.0
MILITARY GROUND RUNUP DATA

(GRADE I) SUPPRESSORS
(GRADE II) SUPPRESSORS
(GRADE III) SUPPRESSORS
A-3
A-4
RA-5C
A-6A
A-7E
A-10A
(AF32A-13) F-111A SUPP
(AF32A-14) F-4 SUPP
(AF32A-16) F-100 SUPP
(AF32A-17) F-106 SUPP
(AF32A-18) F-5 SUPP
(AF32A-18) T-38 SUPP
(AF32A-19) A-7 SUPP
(AF32A-23) F-15 SUPP
(AF32A-24) A-7 SUPP
(AF32A-25) F-16 SUPP
(AF32A-52) KC-135A SUPP
A-37B
B-1
B-52B&C&D&E
B-52G
B-52H
B-57G
FB-111A
C-5A
C-7A
C-9A
KC-10A
YC-14
YC-14 FLAPS 30
YC-14 THRUSTER
YC-15
YC-15 FLAPS 24
C-18A
C-21A
KC-97L
C-118
C-119L
C-121
AC-123K
C-130A&D
C-130E
C-130H&N&P
C-131B
C-135A
C-135B
KC-135R
C-140
C-141A
E-3A
F-4C
F-5A&B
F-5E
F-8
F-14A
F-15A
F-16
F-18
F-100D
F-101B
F-102A
F-104D
F-105D
F-106
F-111D
F-111F
HUSH HOUSE(F-105 A/C)
HUSH HOUSE(F-106 A/C)
HUSH HOUSE(F-111F A/C)
HUSH HOUSE(F-15 A/C)
HUSH HOUSE(F-16 A/C)
HUSH HOUSE(F-4 A/C)
HUSH HOUSE(F100-PW-100 E)
HUSH HOUSE(J75-P-17 ENG.)
HUSH HOUSE(J75-P-19 ENG.)
HUSH HOUSE(J79-GE-15 ENG)
HUSH HOUSE(T-38 A/C)
HUSH HOUSE(TF30-P-100 E)
HUSH HOUSE(TF41-A-1 ENG.)
L-1011-1
OTHER MILITARY
P-3A
SR-71
S-3A
T-2C
T-29
T-33A
T-37B
T-38A
T-39A
T-43A
U-2
U-4B
AV-8A
AV-8B
OV-10A

NOISEFILE 6.0
CIVILIAN DATA

INM01 B-747 (Q)
INM02 B-747 (N)
INM03 B-747 (N)
INM04 B-747 (N)
INM05 NOT AVAILABLE
INM06 DC-8-20 (Q)
INM07 B-707 (Q)
INM08 B-720 (Q)
INM09 B-707 (N)
INM10 B-707 (N)
INM11 B-720B (N)
INM12 DC-8-50 (N)
INM13 DC-8-60 (N)
INM14 DC-8-70 (N)
INM15 BAE-146
INM16 B-707 (QN)
INM17 DC-8-60 (QN)
INM18 CONCORDE
INM19 DC-10-10
INM20 DC-10-30
INM21 DC-10-40
INM22 L-1011
INM23 L-1011
INM24 B-727 (N)
INM25 B-727 (N)
INM26 B-727 (N)
INM27 B-727 (Q)
INM28 B-727 (Q)
INM29 B-727 (Q)
INM30 B-727 (Q)
INM31 A-300
INM32 B-767
INM33 B-767
INM34 A-310
INM35 B-737
INM36 B-737
INM37 BAC-111
INM38 F-28 MK2
INM39 F-28 MK4
INM40 DC-9-30 (N)
INM41 DC-9-10 (N)
INM42 B-737 (N)
INM43 DC-9-30 (Q)
INM44 DC-9-10 (Q)
INM45 B-737 (Q)
INM46 DC-9-50 (Q)
INM47 B-737 (Q)
INM48 MD-81
INM49 MD-82
INM50 MD-83
INM51 B-757
INM52 NOT AVAILABLE
INM53 COMPOS BUS JET
INM54 LEARJET-35
INM55 LEARJET-25
INM56 SABER 80
INM57 CESSNA BUS JET
INM58 CL-600
INM59 GIIB
INM60 MU-3001
INM61 CL-601
INM62 ASTRA
INM63 ELECTRA
INM64 NOT AVAILABLE
INM65 DH-7
INM66 CV-580
INM67 HS-748
INM68 SHORTS SD3-30
INM69 DH-6
INM70 DC-6
INM71 CV-340
INM72 SAAB-340
INM73 2-ENG SM TPROP
INM74 1-ENG VAR PTCH
INM75 1-ENG FIX PTCH
INM76 BEECH BARON
INM77 1-ENG PISTON
INM81 HERCULES-380
INM99 OTHER CIVILIAN

EQUIVALENT AIRCRAFT

For different versions of the same aircraft (i.e. F-4C, F-4E) it is important that the user identify the type of engine used for their particular aircraft. Some aircraft in the USAF inventory have had engine changes and have retained the same aircraft designation. Published in AAMRL-TR-73-110 Volume 1, Appendix A identifies several versions of the C-135 aircraft grouped into two acoustic source categories. Since then several models of this aircraft have gone out of service, been re-engined or added to the inventory. The AAMRL-TR-73-110 report is therefore no longer accurate for categorizing the C-135 aircraft. Models of the C-135 are now grouped as follows:

NOISEFILE Aircraft Code	Aircraft Model	Air Force Engine Designation	Manufacturer Engine Designation
026	C-135A,D,G,L,Q	J57-P-59W/-43WB	-
025	C-135B,C,E,H,J,K, N,P,S,U,V,W,X,Y	TF33-P-5/-9/-102	JT3D-3B
086	KC-135R	F108-CF-100	CFM56-2B-1

NOTE! The the H, K and N models ARE NOT equivalent to the C-135A as indicated in the AMRL-TR-73-110 report.

Therefore it is up to the user to know the aircraft that are being modeled. If the aircraft engines have been changed the user should contact AAMRL/BBE for clarification of the aircraft designation to be used. This is especially important if the user is trying to reconstruct the noise environments for past airbase operations.

APPENDIX B

USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF
USAF BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 USAF
USAF BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 USAF
USAF BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF OPERATIONS SUMMARY USAF
USAF USAF
USAF FOR USAF
USAF USAF
USAF FICTITIOUS AFB USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF DESCRIPTION: USAF
USAF Fictious AFB 1990 AICUZ operations. USAF
USAF Test Case for Print Summary. USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF FILE NAME : FK90RL01 USAF
USAF USAF
USAF DATE : 1-29-90 USAF
USAF USAF
USAF PREPARED BY: Robert A. Lee USAF
USAF USAF
USAF AAMRL/BBE USAF
USAF USAF
USAF Wright Patterson AFB, Ohio 45433 USAF
USAF USAF
USAF AV 785-3664 USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF USAF
USAF BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 USAF
USAF BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 USAF
USAF BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 BASEOPS 3.00 USAF
USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF USAF

APPROVING OFFICIAL

_____ DATE _____

REVIEW

_____ DATE _____

_____ DATE _____

_____ DATE _____

_____ DATE _____

AIRFIELD INFORMATION

Magnetic Declination : 5 degrees to EAST
Field Elevation : 600 ft.

SPECIFIC POINTS

Specific point : A
Entered at : 40 Degrees 4 Minutes 60.0 Seconds North Latitude
100 Degrees 0 Minutes 0.0 Seconds West Longitude
(X = 100000 , Y = 230378)

Specific point : B
Entered at : 39 Degrees 56 Minutes 0.0 Seconds North Latitude
100 Degrees 0 Minutes 0.0 Seconds West Longitude
(X = 100000 , Y = 175697)

Specific point : C
Entered at : 40 Degrees 1 Minutes 60.0 Seconds North Latitude
99 Degrees 58 Minutes 60.0 Seconds West Longitude
(X = 104655 , Y = 212149)

NAVIGATIONAL AIDS

Navigational aid : NA1
Entered at : 40 Degrees 5 Minutes 0.0 Seconds North Latitude
100 Degrees 0 Minutes 0.0 Seconds West Longitude
(X = 100000 , Y = 230380)

Navigational aid : NA2
Entered at : 39 Degrees 58 Minutes 0.0 Seconds North Latitude
100 Degrees 0 Minutes 0.0 Seconds West Longitude
(X = 100000 , Y = 187848)

RUNWAYS

Runway : 16
Length : 13964 ft. Glide Slope : 4 Degrees
Displacements : TAKEOFF - 250 ft.
LANDING - 250 ft.
Start : 40 Degrees 0 Minutes 0.0 Seconds North Latitude
100 Degrees 0 Minutes 0.0 Seconds West Longitude
(X = 100000 , Y = 200000)
End : 40 Degrees 0 Minutes 0.0 Seconds North Latitude
100 Degrees 3 Minutes 0.0 Seconds West Longitude
(X = 86036 , Y = 200000)

Runway : 34
Length : 13964 ft. Glide Slope : 4 Degrees
Displacements : TAKEOFF - 250 ft.
LANDING - 250 ft.
Start : 40 Degrees 0 Minutes 0.0 Seconds North Latitude
100 Degrees 3 Minutes 0.0 Seconds West Longitude
(X = 86036 , Y = 200000)
End : 40 Degrees 0 Minutes 0.0 Seconds North Latitude
100 Degrees 0 Minutes 0.0 Seconds West Longitude
(X = 100000 , Y = 200000)

BASED AIRCRAFT

AIRCRAFT	PROFILE ID	TRACK ID	TRACK TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
F-4	4001	16A1	ARRIVAL	20.74	3.16	2.10	26.00
F-4	4002	16D1	DEPARTURE	16.13	2.17	1.80	20.10
F-4	4003	34D1	DEPARTURE	4.32	1.26	0.32	5.90
			TOTAL F-4 ARRIVAL				26.00
			TOTAL F-4 DEPARTURE				26.00
			TOTAL F-4 CLOSED PATTERN				0.00
F-15	1501	16A1	ARRIVAL	19.80	0.00	3.90	23.70
F-15	1502	16A2	ARRIVAL	46.10	2.00	0.00	48.10
F-15	1504	16A3	ARRIVAL	3.40	0.00	0.00	3.40
F-15	1507	16C1	CLOSED	12.34	6.82	5.43	24.59
F-15	1505	34C1	CLOSED	10.80	4.10	6.11	21.01
F-15	1506	16D1	DEPARTURE	40.53	6.21	4.00	50.74
F-15	1503	16D2	DEPARTURE	18.47	3.53	0.00	22.00
F-15	1508	34D1	DEPARTURE	2.46	0.00	0.00	2.46
			TOTAL F-15 ARRIVAL				75.20
			TOTAL F-15 DEPARTURE				75.20
			TOTAL F-15 CLOSED PATTERN				45.60

TRANSIENT AIRCRAFT

AIRCRAFT	PROFILE ID	TRACK ID	TRACK TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
A-7	A701	16A1	ARRIVAL	2.17	0.00	0.00	2.17
A-7	A702	34D1	DEPARTURE	2.00	0.17	0.00	2.17
			TOTAL A-7 ARRIVAL				2.17
			TOTAL A-7 DEPARTURE				2.17
			TOTAL A-7 CLOSED PATTERN				0.00
C-9	C901	16A1	ARRIVAL	4.30	0.00	0.00	4.30
C-9	C902	34D1	DEPARTURE	4.30	0.00	0.00	4.30
			TOTAL C-9 ARRIVAL				4.30
			TOTAL C-9 DEPARTURE				4.30
			TOTAL C-9 CLOSED PATTERN				0.00

CIVIL AIRCRAFT

AIRCRAFT	PROFILE ID	TRACK ID	TRACK TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
INM09 B-707	C001	16A1	ARRIVAL	20.74	3.16	2.10	26.00
INM09 B-707	C004	16D1	DEPARTURE	24.16	0.00	1.84	26.00
			TOTAL INM09 B-707 ARRIVAL				26.00
			TOTAL INM09 B-707 DEPARTURE				26.00
			TOTAL INM09 B-707 CLOSED PATTERN				0.00
INM35 B-737	C006	16A1	ARRIVAL	5.90	0.00	0.00	5.90
INM35 B-737	C003	34D1	DEPARTURE	4.32	1.26	0.32	5.90
			TOTAL INM35 B-737 ARRIVAL				5.90
			TOTAL INM35 B-737 DEPARTURE				5.90
			TOTAL INM35 B-737 CLOSED PATTERN				0.00
INM75 1-ENG	C005	16A1	ARRIVAL	18.50	1.60	0.00	20.10
INM75 1-ENG	C002	16D1	DEPARTURE	16.13	2.17	1.80	20.10
			TOTAL INM75 1-ENG ARRIVAL				20.10
			TOTAL INM75 1-ENG DEPARTURE				20.10
			TOTAL INM75 1-ENG CLOSED PATTERN				0.00

Flight Profile : 1501 for a BASED F-15
On Flight Track 16A1
Wing B standard arrival

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	80 % RPM	190
05	70000	1000	84 % RPM	210
04	90000	2000	84 % RPM	250
04	290000	2000	84 % RPM	250

Flight Profile : 1502 for a BASED F-15
On Flight Track 16A2
Wing B instrument Arrival

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	80 % RPM	190
05	10000	500	82 % RPM	200
05	30000	1000	82 % RPM	210
04	70000	2000	82 % RPM	210
04	290000	2000	80 % RPM	250

Flight Profile : 1503 for a BASED F-15
On Flight Track 16D2
Wing B Abatement Departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	100 % RPM	0
03	8000	0	100 % RPM	190
04	25000	1000	80 % RPM	260
04	40000	4000	80 % RPM	350
04	290000	10000	80 % RPM	350

Flight Profile : 1504 for a BASED F-15
On Flight Track 16A3
Wing B Instrument Arrival

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	80 % RPM	190
05	10000	500	82 % RPM	200
05	30000	1000	82 % RPM	210
04	70000	2000	82 % RPM	210
04	290000	2000	80 % RPM	250

Flight Profile : 1505 for a BASED F-15
On Flight Track 34C1
Wing B IFR pattern

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	100 % RPM	0
03	8000	0	100 % RPM	190
04	20000	1500	82 % RPM	220
04	72000	1500	82 % RPM	220
05	80000	1000	80 % RPM	200
05	88000	100	85 % RPM	180
05	92566	0	85 % RPM	170

Flight Profile : 1506 for a BASED F-15
On Flight Track 16D1
Wing B Standard departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
01	0	0	100 % RPM	0
01	8000	0	100 % RPM	250
03	10000	500	100 % RPM	280
04	40000	4000	80 % RPM	350
04	290000	10000	80 % RPM	350

Flight Profile : 1507 for a BASED F-15
On Flight Track 16C1
Wing B IFR pattern

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	100 % RPM	0
03	8000	0	100 % RPM	190
04	20000	1500	82 % RPM	220
04	72000	1500	82 % RPM	220
05	80000	1000	80 % RPM	200
05	88000	100	85 % RPM	180
05	92566	0	85 % RPM	170

Flight Profile : 1508 for a BASED F-15
On Flight Track 34D1
Wing B Abatement Departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	100 % RPM	0
03	8000	0	100 % RPM	190
04	25000	1000	80 % RPM	260
04	40000	4000	80 % RPM	350
04	290000	10000	80 % RPM	350

Flight Profile : 4001 for a BASED F-4
On Flight Track 16A1
Wing A standard Arrival

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	75 % RPM	185
05	70000	1000	80 % RPM	200
04	90000	2000	80 % RPM	250
04	290000	2000	80 % RPM	250

Flight Profile : 4002 for a BASED F-4
On Flight Track 16D1
Wing A standard departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
01	0	0	100 % RPM	0
01	8000	0	100 % RPM	210
03	15000	1000	100 % RPM	260
04	40000	4000	80 % RPM	350
04	290000	10000	80 % RPM	350

Flight Profile : 4003 for a BASED F-4
On Flight Track 34D1
Wing A alternate departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
01	0	0	100 % RPM	0
01	8000	0	100 % RPM	210
03	15000	1000	100 % RPM	260
04	40000	4000	80 % RPM	350
04	290000	10000	80 % RPM	350

Flight Profile : A701 for a TRANSIENT A-7
On Flight Track 16A1
Standard arrival

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	82 % RPM	135
05	30400	1643	82 % RPM	135
05	200000	10532	86 % RPM	320

Flight Profile : A702 for a TRANSIENT A-7
On Flight Track 34D1
Standard departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	96 % RPM	0
03	3000	0	96 % RPM	145
03	11100	600	96 % RPM	200
03	20000	2200	96 % RPM	250
03	53000	8000	96 % RPM	350
03	200000	15000	96 % RPM	350

Flight Profile : C001 for a CIVIL INM09 B-707 (N)
On Flight Track 16A1
Airline A Straight in arrival

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	4355 LBS	137
05	18076	1000	4355 LBS	137
05	56235	3000	4355 LBS	137
05	60050	3200	4355 LBS	137
05	75313	4000	4355 LBS	250
05	113471	6000	4355 LBS	250
05	200000	10580	4335 LBS	250

Flight Profile : C002 for a CIVIL INM75 1-ENG FIX PTCH
On Flight Track 16D1
Aero Club Straight out Departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	100 % RPM	0
03	1850	0	100 % RPM	77
03	7500	528	100 % RPM	77
03	12316	1000	100 % RPM	77
03	13316	1098	100 % RPM	77
03	22520	2000	100 % RPM	77
03	32724	3000	100 % RPM	77
03	42928	4000	100 % RPM	77
03	53132	5000	100 % RPM	77
03	200000	19393	100 % RPM	77

Flight Profile : C003 for a CIVIL INM35 B-737
On Flight Track 34D1
Airline B Straight out Departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	15888 LBS	0
03	3219	0	15888 LBS	142
03	7312	1000	16292 LBS	144
03	8312	1224	15144 LBS	145
03	15283	1627	14001 LBS	214
03	22347	3000	14278 LBS	220
03	28365	3260	13585 LBS	261
03	38603	5000	13897 LBS	269
03	54298	7500	14481 LBS	278
03	200000	28026	14481 LBS	291

Flight Profile : C004 for a CIVIL INM09 B-707 (N)
On Flight Track 16D1
Departure of Airline A aircraft.

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	15675 LBS	0
03	5681	0	15675 LBS	160
03	12282	1000	15675 LBS	160
03	29629	2700	13850 LBS	210
03	31936	3000	13850 LBS	210
03	46019	3970	13850 LBS	250
03	59447	5500	13850 LBS	250
03	200000	18929	13850 LBS	250

Flight Profile : C005 for a CIVIL INM75 1-ENG FIX PTCH
On Flight Track 16A1
Aero Club Arrivals

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	30 % RPM	65
05	18076	1000	30 % RPM	65
05	56235	3000	30 % RPM	65
05	60050	3200	30 % RPM	65
05	75313	4000	30 % RPM	65
05	113471	6000	30 % RPM	65
05	200000	10580	30 % RPM	65

Flight Profile : C901 for a TRANSIENT C-9
On Flight Track 16A1
Standard arrival

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	1.35 EPR	200
05	30400	1643	1.35 EPR	200
05	200000	10532	1.7 EPR	300

Flight Profile : C902 for a TRANSIENT C-9
On Flight Track 34D1
Standard departure

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
03	0	0	2 EPR	0
03	5000	0	? EPR	150
03	11100	470	2 EPR	170
03	47000	4000	1.7 EPR	300
03	87000	8000	1.7 EPR	300
03	200000	15000	1.7 EPR	300

Flight Profile : C006 for a CIVIL INM35 B-737
On Flight Track 16A1
Arrival of Airline B Aircraft.

POWER #	DISTANCE (FT)	ALTITUDE (FT)	POWER SETTING	AIRSPEED (KTS)
05	0	50	3787 LBS	139
05	18076	1000	3787 LBS	139
05	56235	3000	3787 LBS	139
05	60050	3200	3787 LBS	139
05	75313	4000	3787 LBS	250
05	113471	6000	3787 LBS	250
05	200000	10580	3787 LBS	250

FLIGHT TRACK 16A1

Description: 16A1 on Runway 16 (ARRIVAL)
Straight out Track

Proceed 300000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-4	4001	ARRIVAL	20.74	3.16	2.10	26.00
BASED	F-15	1501	ARRIVAL	19.80	0.00	3.90	23.70
TRANSIENT	A-7	A701	ARRIVAL	2.17	0.00	0.00	2.17
TRANSIENT	C-9	C901	ARRIVAL	4.30	0.00	0.00	4.30
CIVIL	INM09 B-707	C001	ARRIVAL	20.74	3.16	2.10	26.00
CIVIL	INM75 1-ENG	C005	ARRIVAL	18.50	1.60	0.00	20.10
CIVIL	INM35 B-737	C006	ARRIVAL	5.90	0.00	0.00	5.90

FLIGHT TRACK 16A2

Description: 16A2 on Runway 16 (ARRIVAL)
Left hand turn at 10000 ft.

Proceed 10000 ft.
Turn LEFT 90 degrees with a 2000 ft. Radius
Proceed 290000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-15	1502	ARRIVAL	46.10	2.00	0.00	48.10

FLIGHT TRACK 16A3

Description: 16A3 on Runway 16 (ARRIVAL)
Right hand turn at 25000 ft.

Proceed 25000 ft.
Turn RIGHT 45 degrees with a 2000 ft. Radius
Proceed 290000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-15	1504	ARRIVAL	3.40	0.00	0.00	3.40

FLIGHT TRACK 16C1

Description: 16C1 on Runway 16 (CLOSED PATTERN)
Right hand pattern

Proceed 10000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 5000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 35000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 5000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 25000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-15	1507	CLOSED	12.34	6.82	5.43	24.59

FLIGHT TRACK 34C1

Description: 34C1 on Runway 34 (CLOSED PATTERN)
Right hand pattern

Proceed 10000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 5000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 35000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 5000 ft.
Turn RIGHT 90 degrees with a 2000 ft. Radius
Proceed 25000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-15	1505	CLOSED	10.80	4.10	6.11	21.01

FLIGHT TRACK 16D1

Description: 16D1 on Runway 16 (DEPARTURE)
Straight out track

Proceed 300000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-4	4002	DEPARTURE	16.13	2.17	1.80	20.10
BASED	F-15	1506	DEPARTURE	40.53	6.21	4.00	50.74
CIVIL	INM75 1-ENG	C002	DEPARTURE	16.13	2.17	1.80	20.10
CIVIL	INM09 B-707	C004	DEPARTURE	24.16	0.00	1.84	26.00

FLIGHT TRACK 16D2

Description: 16D2 on Runway 16 (DEPARTURE)
Instrument Departure

Proceed 20000 ft.
Turn RIGHT 45 degrees with a 5000 ft. Radius
Proceed 280000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-15	1503	DEPARTURE	18.47	3.53	0.00	22.00

FLIGHT TRACK 34D1

Description: 34D1 on Runway 34 (DEPARTURE)
Straight out track

Proceed 300000 ft.

A/C TYPE	AIRCRAFT	POWER PROFILE ID	OPERATION TYPE	NUMBER OF DAILY OPERATIONS DAY	EVE	NIGHT	TOTAL
BASED	F-4	4003	DEPARTURE	4.32	1.26	0.32	5.90
BASED	F-15	1508	DEPARTURE	2.46	0.00	0.00	2.46
TRANSIENT	A-7	A702	DEPARTURE	2.00	0.17	0.00	2.17
TRANSIENT	C-9	C902	DEPARTURE	4.30	0.00	0.00	4.30
CIVIL	INM35 B-737	C003	DEPARTURE	4.32	1.26	0.32	5.90

AIRCRAFT	PAD ID	RUNUP ID	POWER SETTING	MINUTES AT POWER DAY	EVE	NIGHT	TOTAL
A-7 transient engine trims							
comment line 2							
A-7E	RP1	RP12	55 % NC	4.0	1.0	1.0	6.0
			80 % NC	1.0	1.0	1.0	3.0
			95 % NC	1.0	1.0	0.0	2.0
			99 % NC	0.5	0.0	0.0	0.5
			99.5 % NC	2.0	1.0	2.0	5.0
C-9 transient engine trims							
C-9A	RP2	RP23	1.0 EPR	2.0	1.0	1.0	4.0
			1.5 EPR	1.0	1.0	1.0	3.0
			1.7 EPR	1.0	1.0	0.0	2.0
			2.0 EPR	0.5	0.0	0.0	0.5
F-4 maintence engine trims							
F-4C	RP1	RP11	65 % RPM	20.0	10.0	5.0	35.0
			80 % RPM	5.0	1.0	4.0	10.0
			95 % RPM	5.0	1.0	4.0	10.0
			100 % RPM	3.0	0.0	0.0	3.0
F-4 maintence engine trims							
F-4C	RP2	RP21	65 % RPM	20.0	10.0	5.0	35.0
			80 % RPM	5.0	1.0	4.0	10.0
			95 % RPM	5.0	1.0	4.0	10.0
			100 % RPM	3.0	0.0	0.0	3.0
F-15 maintence engine trims							
F-15A	RP2	RP22	63 % NC	31.0	15.0	5.0	51.0
			70 % NC	15.0	4.0	6.0	25.0
			85 % NC	12.0	2.0	4.0	18.0
			90 % NC	5.0	1.0	0.0	6.0
			A/B	4.0	1.0	0.0	5.0

RUNUP PAD RP1

LOCATION : 40 Degrees 0 Minutes 0.0 Seconds North Latitude
100 Degrees 0 Minutes 20.0 Seconds West Longitude
(X = 98448 , Y = 200000)

ORIENTATION : 145 Degrees from Magnetic North

AIRCRAFT	PROFILE ID	TOTAL TIME IN MINUTES
A-7E	RP12	16.5
F-4C	RP11	58.0

RUNUP PAD RP2

LOCATION : 39 Degrees 59 Minutes 45.0 Seconds North Latitude
100 Degrees 0 Minutes 30.0 Seconds West Longitude
(X = 97672 , Y = 198480)

ORIENTATION : 340 Degrees from Magnetic North

AIRCRAFT	PROFILE ID	TOTAL TIME IN MINUTES
C-9A	RP23	9.5
F-4C	RP21	58.0
F-15A	RP22	105.0

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